

# SOAP



December, 1956

## *and* Chemical Specialties

*this issue...*

Detergents based on sugar  
to be marketed in '57

• • •

Canol packaging winners  
1956 CSMA competition

• • •

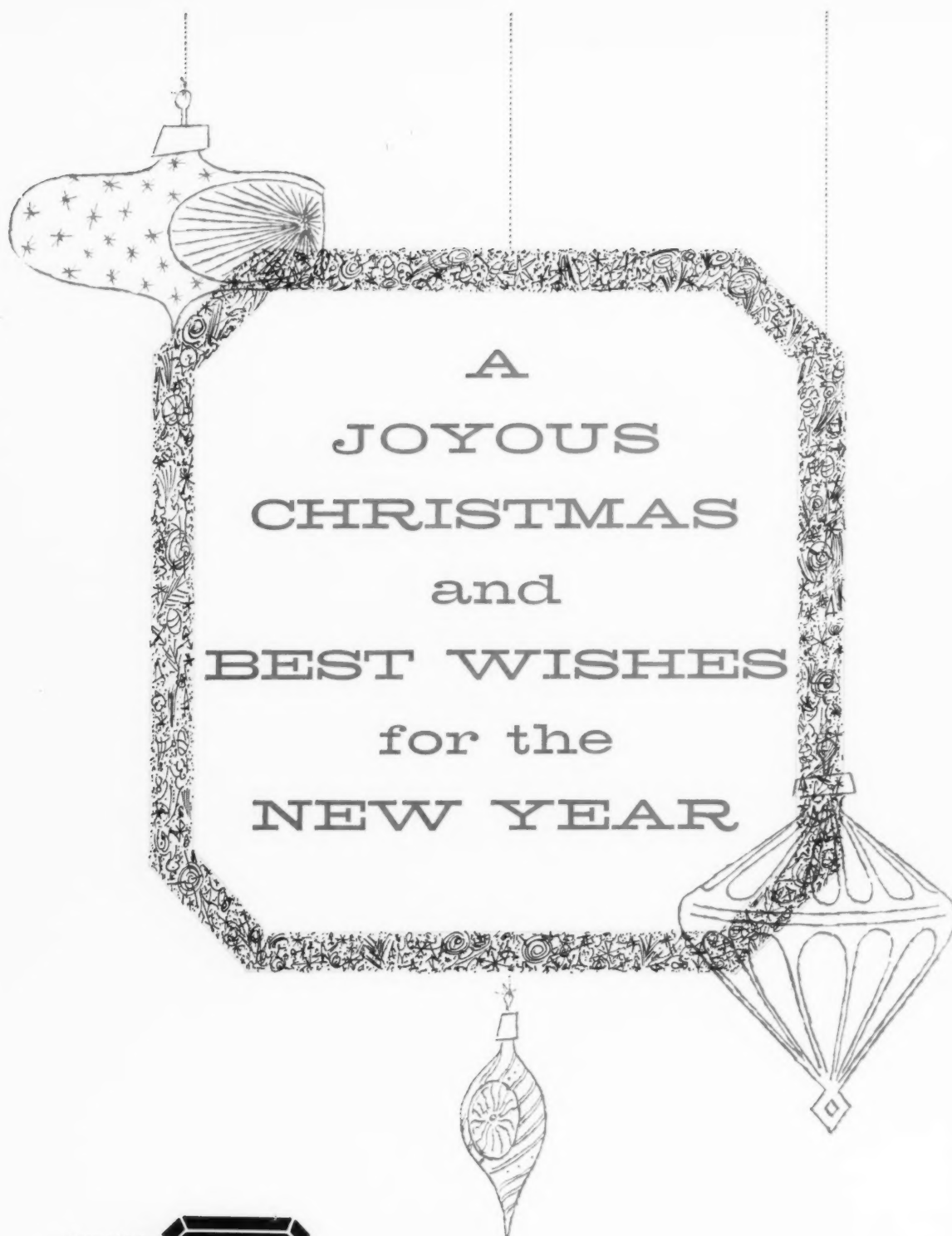
Insecticides key to public  
health problems in the U.S.

• • •

Effectiveness of mercurials  
in antimicrobial role

George F. Reddish, scientist,  
teacher and author in the fields of  
public health, disinfection and anti-  
biotics, receives annual achievement  
award of Chem. Specialties Manu-  
facturers Assn. at 43rd annual  
meeting in Washington, Dec. 4.





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**PROBLEM:** National manufacturer in St. Paul discovers that traces of iron impurities are causing high rate of product rejects. The culprit — rust from aqua ammonia shipped in conventional steel drums.



**COMPLICATIONS:** Ammonia producer's packaging operation is not set up to provide special containers. Manufacturer calls Merchants' Minneapolis office; can something be done to help?



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Resistance

Solid  
Content

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Wax

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# SOAP

## and Chemical Specialties

### CONTENTS

In Brief as the Editor Sees It .....	37
As the Reader Sees It .....	41
Soaps and Detergents CCDA Meeting Topic .....	43
Sugar Based Detergents .....	47
By Lloyd Osipow, Foster D. Snell, Dorothea Marra and William C. York	
New Thickener for Glycerine (Part II) .....	50
By Louis Cohen	
Soap Perfuming—Why and How (Part II) .....	53
By F. V. Wells	
Packaging at Hollingshead .....	89
CSMA Meeting in Washington, D. C. ....	177
Aerosol Packaging Winners .....	180
F-T Waxes from South Africa .....	182
Carton Builds Moth Product Sales .....	184
Public Health Importance of Insect Control .....	191
By A. D. Hess	
Mercurials as Disinfectants .....	199
By Frank B. Engley, Jr.	
Aerosols Abroad .....	207
Switch to Chemical Specialties .....	213
Production Section .....	89
Book Reviews .....	95
New Patents .....	97
Products and Processes .....	99
Production Clinic .....	101
Soap Plant Observer .....	105
Packaging Section .....	109
New Products Pictures .....	125
New Trade Marks .....	135
Pressure Packaging .....	137
Chemical Specialties Section .....	143
Classified Advertising .....	249
Advertisers' Index .....	259
Tale Ends .....	260

FRANK J. REILLY  
Editor

Associate Editor  
CHARLOTTE HAAS

Advertising Manager  
THOMAS MORGAN

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IRA P. MAC NAIR  
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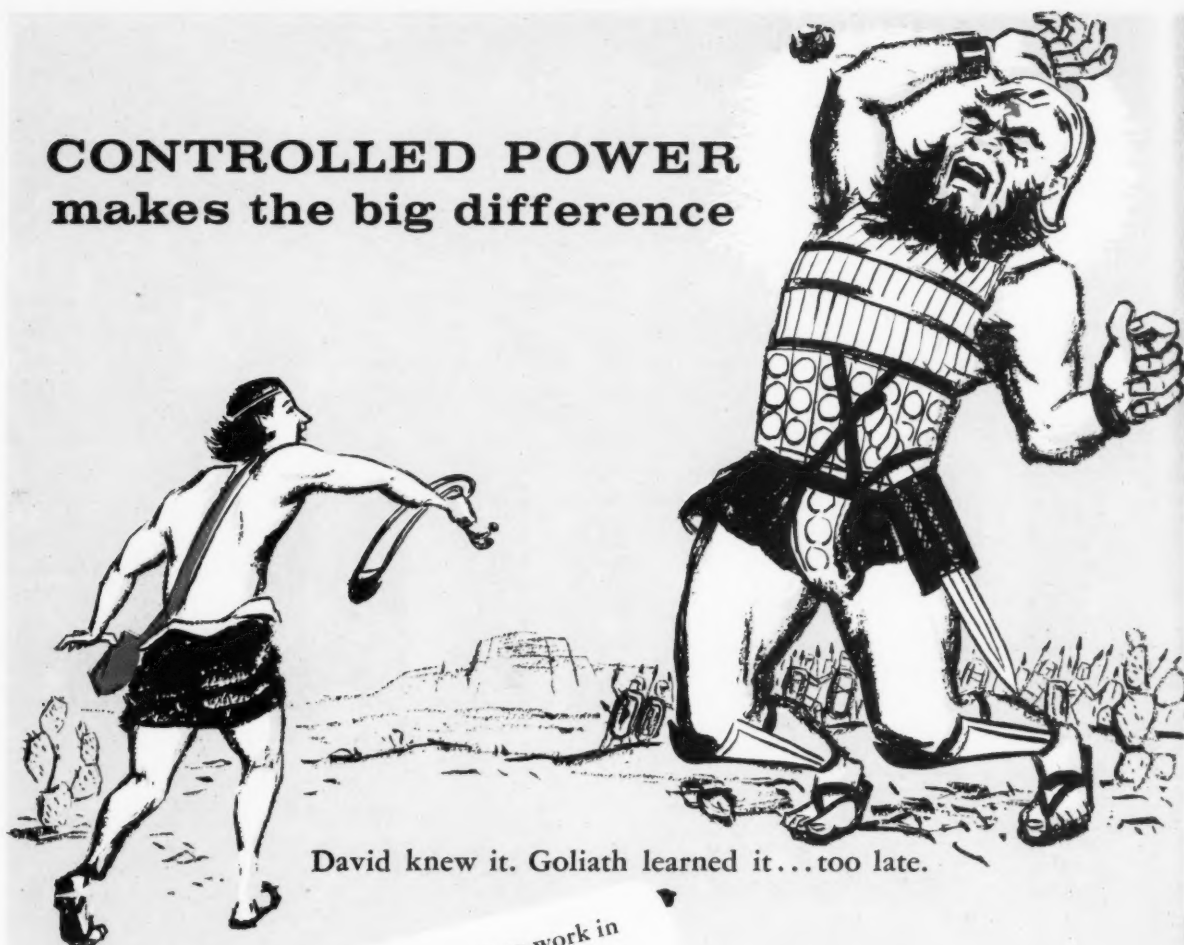


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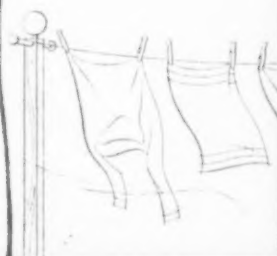
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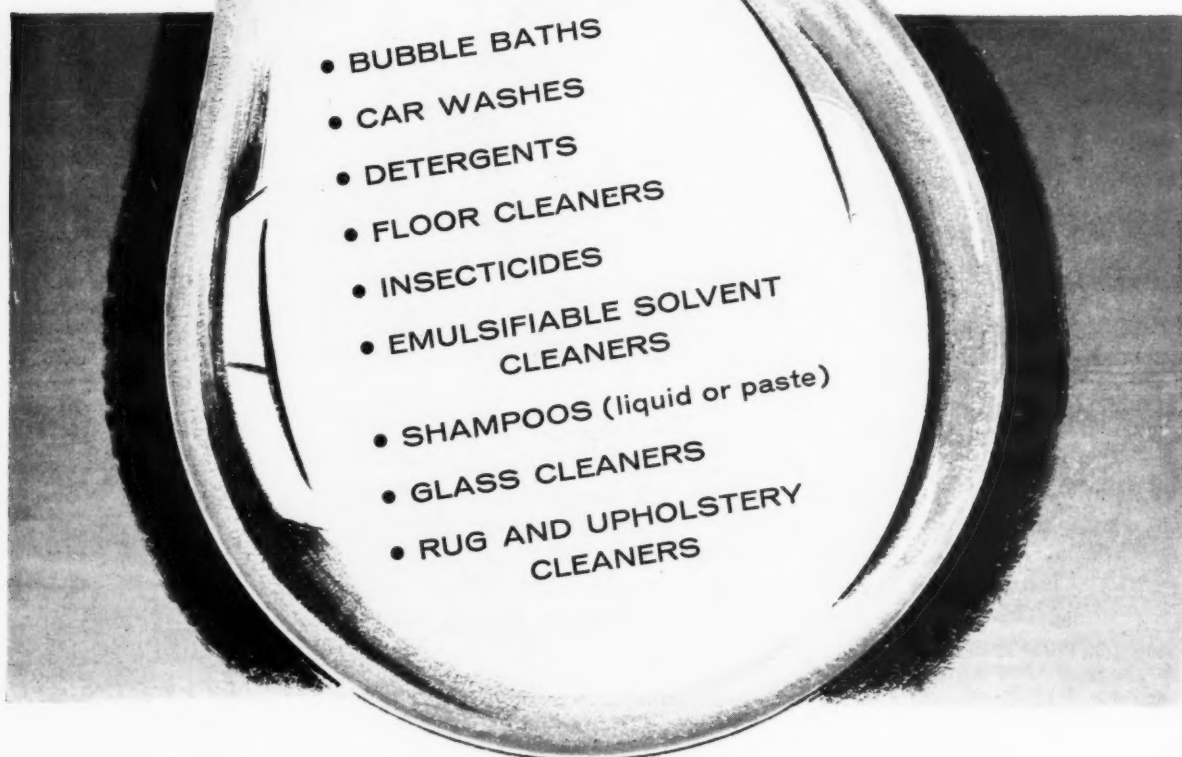
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Oronite's D-40 finished dry detergent in flake, granule or powder form has excellent foaming power in hard or soft water. D-60 offers you a higher active product. Nonionic Dispersant NI-W is a water soluble, low sudsing product desirable where "foam" is a handicap.

## want *rapid*, thorough "wetting"?

D-40, D-60 in dry form, Wetting Agent "S" in paste form and NI-W in liquid form have superior wetting ability. Compare these products with those you are now using—samples are available. Or, tell us your particular needs for "wetting" and we can provide suggested formulations.

## want *emulsifying* or dispersing action?

D-40 and D-60 have the ability to emulsify and suspend animal, vegetable, and mineral fats, oils and greases. Oronite's water soluble Dispersant NI-W is completely compatible with soaps, anionic detergents and cationic germicides. Its companion product Dispersant NI-O is an outstanding emulsifier for water-in-oil emulsions.

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# After Closing...

## Lodes Forms New Firm

Formation of Lodes Aerosol Consultants Inc., 730 Fifth Avenue, New York, was announced Dec. 3



Frederick G. Lodes

by Frederick G. Lodes, founder and president of the new venture. Devoted exclusively to pressure packaging, the new consulting firm will be available for technical assistance, for consultation concerning the foreign aerosol market, and for surveys relating to proposed business acquisitions.

Technical assistance by Mr. Lodes and his staff will cover research, manufacturing and marketing phases of the aerosol business with special emphasis on guidance to those wishing to enter the field. The organization expects to keep American aerosol manufacturers informed about developments in Europe and elsewhere and will keep foreign countries abreast of aerosol developments in the United States.

Mr. Lode's career has been closely linked to the pressure packaging field. Having graduated with a B.S. degree in chemistry from Fordham University and with an M.S. from Columbia University, he joined the General Chemical Division of Allied Chemical & Dye Corp., in 1941. Starting in 1945,

Mr. Lodes was active in the development of various liquefied gas propellants, now known as "Generations". He was responsible for the presentation of self-spraying products to various potential manufacturers and marketers.

Mr. Lodes became co-founder of Precision Valve Corp., Yonkers, N.Y., in 1950. This firm has grown into the largest manufacturer of aerosol valves in the world. Mr. Lodes resigned recently as an officer and director of Precision Valve to found his new firm. He has made patent contributions to the development of containers, valves, propellants, and formulations. In recent years he took several trips to Europe to promote the aerosol principle abroad. For the past ten years Mr. Lodes has been active on many committees of CSMA's Aerosol Division. He is currently chairman of the Aerosol Publicity Committee and the Aerosol Package Award Committee of CSMA.

—★—

## Bridgeport Earnings Lower

Bridgeport Brass Co., Bridgeport, Conn., recently reported an increase in net sales and a decline in net income and earnings for the first nine months of this year. Net sales were up to \$127,761,500, in the nine months ended September 30, from \$124,303,253, in the corresponding period of last year. Net income for the first three-quarters of 1956 declined to \$3,199,987 and \$1.90 from \$4,405,976, in the corresponding period of 1955.

—★—

## Olympic Fly Control

Olympic Village, Heidelberg, Australia, a suburb of Melbourne, has been treated with "Diazinon," an insecticide manufactured by Geigy Chemical Corp., Ardsley, N. Y., it was announced last month. The village, which is serving as headquarters for over 6,000 athletes participating in the

Olympic Games, was sprayed prior to the athletes' arrival, to aid in the control of flies during the period of the games. Australia is now in its early summer season.

—★—

## Babbitt Names Woolley

John L. Woolley has been appointed assistant vice-president and assistant director of marketing



John L. Woolley

of B. T. Babbitt, Inc., New York, it was announced recently by Ward F. Parker, vice-president and director of marketing. For the past three years, Mr. Woolley was national sales manager. He previously had served as Pacific coast regional manager where he supervised the sales of "Bab-O" and "Glim." Mr. Woolley joined Babbitt in 1936 when the Holly Products Co., Vernon, Calif., of which he was sales manager, was purchased by Babbitt.

—★—

## Aerosol Drug Packaging

Fluid Chemical Co., Newark, N. J., recently announced its entry into the highly-specialized field of aerosol packaging of ethical drug applications. One of the ethical drug firms served by Fluid is Roussel Corp., New York, manufacturers of "Topicort Spray," a 0.5 percent hydrocortisone spray, in aerosol form, that provides topical use of hydrocortisone. The product is designed for treatment of a wide range of common dermatoses including poison ivy and inflammation of sunburn.



## Soap Meeting Program Set for Jan. 23-25

**P**IONEERING Pays, Yesterday and Today" is the theme set for the 1957 convention of the Association of American Soap & Glycerine Producers, Inc., to be held January 23, 24, and 25 at the Waldorf Astoria Hotel, New York. An exhibit of old time samples of pioneering in selling soap and cleanliness and of modern developments in selling and producing soap and detergents will stress the theme.

Tuesday, Jan. 23, will be devoted to various committee meetings. Wednesday morning, Jan. 24, at 10 a.m. the industrial and fatty acid divisions, and the technical advisory committee will hold concurrent meetings. Featured speaker at Wednesday's luncheon (12:30 p.m.) will be Wheeler McMillan, vice-president of *Farm Journal* and executive director of the President's Commission on Increased Use of Agricultural Products. He will present some aspects of research on methods to increase the use of agricultural products in industry.

Wednesday afternoon, at 2 p.m., the fatty acid division will meet and will hear R. Potts on "European Developments in Fatty Acid Production" and David D. Moore, of Battelle Memorial Institute on a subject yet to be announced.

Wednesday evening, from 5 p.m. to 6:30 p.m. a reception and cocktail party will be held in the Astor Gallery by *Soap & Chemical Specialties*.

The morning of Thursday, Jan. 24, will be devoted to a general session starting at 10 a.m. Association president E. B. Osborn will report on association activities. A speaker from the A. C. Neilsen Co. will present a talk on "Grocery Store Trends" and Roy Reiersen, Bankers Trust Co., will speak on the "Economic Outlook." Thursday's luncheon meeting at 12:30 p.m. will probably hear William McC. Martin, Jr. of the Federal Reserve Bank. In the afternoon of the 24th the glycerine division

meets at 2 p.m. This session will be followed by the Maid of Cotton Fashion Show in the Grand Ballroom from 4 p.m. to 6:30.

Friday morning, Jan. 25, from 7:30 to 9 a.m. the *True Story* breakfast will be held in the Astor Gallery. The general session in the Jade Room, starting 10 a.m., will hear W. Werner of Procter & Gamble Co. reporting on cleanliness promotion activities in household and industrial fields. Henry Moss of Monsanto Chemical Co. will report on the work of the technical advisory committee. The third topic in this session will probably deal with end use breakdown of soaps and detergents in household and industrial markets, including some little known applications.

Featured speaker at the luncheon meeting will be L. E. Burney, Surgeon General, U. S. Public Health Service.

The afternoon of Jan. 25 will be devoted to members' annual meetings and meeting of the board. There will be a members' reception and cocktail party from 6:30 to 7:30 p.m. and a banquet and entertainment in the Grand Ballroom from 7:30 p.m. to 1 a.m.

### New Johnson Floor Wax

A new water-emulsion, industrial floor wax, designed to reduce rewaxing frequency, has been



developed by S. C. Johnson & Son, Inc., Racine, Wisc., it was announced recently. Tradenamed "Waxtra," the product has a high solid content which is said to provide long-lasting brightness, dirt and water-spotting resistance, and absence of streaking and smearing. It is also claimed to be slip-resistant. "Waxtra" is being sold in five, 30 and 55-gallon drums through maintenance supply houses and is priced slightly above the company's regular line.

—★—

### CSMA Nominates Peterson

Harry E. Peterson, Peterson Filling & Packaging Co., Danville, Ill., and James E. Ferris, Hooker Electrochemical Co., Niagara Falls, N. Y., have been selected by the nominating committee for the presidency and vice-presidency, respectively, of the Chemical Specialties Manufacturers Association, New York, for a term of one year.

It had been customary in past years to renominate the president and vice-president for a second term. However, guided by the recommendations of many past presidents, all of whom consider the term of service too long, the nominating committee, this year, has decided to nominate all officers for one-year terms. In addition, the committee recommended to the board of governors that all future nominations also be made on this basis.

Also nominated for 1957 posts are Donald M. King, Masury Young Co., Boston, second vice-president; P. C. Reilly, Reilly Tar & Chemical Corp., Indianapolis, treasurer; and H. W. Hamilton, secretary. Nominated to serve on the board of governors for terms of three years are Dr. Emil G. Klarman, Lehn & Fink Products Corp., New York, current CSMA president; Anton E. Budner, S. C. Johnson & Son, Inc., Racine, Wisc.; and Russell G. Puhle, Tykor Products Division of Borden Co., New York.

Election of officers and directors of CSMA will take place during the 43rd annual meeting in Washington, D. C., Dec. 4th.



### Alpha Appoints Aer-O-Fil

Aer-O-Fil Engineering Corp., Bridgeport, Conn., has been appointed exclusive sales representa-



A. W. Whitney

tive for Alpha Engineering and Machine Works, Mount Prospect, Ill., in the northeastern states, it was announced last month by Lee J. Wallace, Aer-O-Fil president. Aer-O-Fil will handle Alpha's line of aerosol plant equipment in Virginia, West Virginia, Maryland, Washington D. C., New Jersey, Pennsylvania, New York, Connecticut, Rhode Island, Massachusetts, Maine, Vermont and New Hampshire.

Alpha's line of aerosol equipment includes processing, propellant handling, refrigeration and packaging machinery, plus stainless steel tanks, filters, mixers, piping, pumps, compressors, condensers, and packaging conveyors.

Aer-O-Fil Engineering Corp. was recently formed through consolidation of three New England packaging machinery firms: The Wallace Co.; L. A. Whitney Co.; and Robins Engineering Co.

Lee J. Wallace, former vice president of J. P. Salmini Co., Bridgeport, will serve as president and head the engineering section. Chief engineer of the company is Albert E. Osman, formerly project engineer with Bridgeport Brass Co., Bridgeport. Mr. Osman will be assisted by Milton Robbins. Leland A. Whitney has been named treasurer of the corporation while A.

William Whitney has been appointed sales manager.

—★—

### Hooker Caustic Guide

*Caustic Soda Engineering and Handling Guide* is the title of a 40 page brochure published last month by Hooker Electrochemical Co., Niagara Falls, N. Y. Included is information on construction materials and equipment for the handling and storage of caustic soda solutions, directions for unloading and methods of diluting. Numerous graphs and charts and tables cover physical data on liquid caustic soda. Precautionary measures and first aid treatment are outlined in a brief section on safety. A number of photographs show tank cars, storage equipment, and a number of the company's plants.

—★—

### Canco Names McCambridge

John McCambridge has been appointed comptroller of American Can Co., New York, it was announced recently by William C. Stolk, president. Mr. McCambridge was formerly assistant comptroller and succeeds George J. Madge who has been elected a vice-president in the company's executive department.

Mr. McCambridge joined Canco in 1920 as a cost clerk at the firm's Joliet, Ill., plant. In 1937 he was transferred to the New York office and in 1950 was named general auditor. He was appointed assistant comptroller in 1954.

John McCambridge



### Lightfoot Appoints Two

Lightfoot Schultz Co., Hoboken, N.J., recently announced the appointments of Leopold Safrin



Leopold Safrin

and Victor Levenson as director of research and quality control and sales executive, respectively.

A graduate of the University of Vienna, Dr. Safrin was formerly engaged in research with J. Eavenson & Sons, Camden, N.J., since 1938. He has developed many formulations of toilet, medicated and special soaps and recently perfected a special formulation for industrial lubricating soaps.

Mr. Levenson was formerly general manager of Eavenson. In his new post, he will handle accounts formerly serviced by that company. Mr. Levenson, who has been active in the soap industry for 35 years, is a member and former director of the Association of American Soap and Glycerine Producers Inc., New York.

—★—

### New Aerosol Container

A new light-weight, aluminum aerosol container, designed for deodorants, pharmaceuticals and related specialties, has been developed by Peerless Tube Co., Bloomfield, N.J., it was announced late last month by T. W. Schmitt, executive vice-president.

Mr. Schmitt described the new container as a one-piece aluminum can, with no bottom seam and with a very small aperture at the top to which the valve is sealed.

It is said to be leakproof, unbreakable, capable of withstanding high internal pressure, flexible in decoration and variable in length without the building of new molds. Containers can be made as small as one-inch in length.

According to Mr. Schmitt, the container may be decorated with up to four colors on the base coat, and may be buffed and either anodized or coated. He added that the walls are much thinner than glass or plastic, thus resulting in greater volume for the container and lighter weight.

—★—

#### **Furnace Endurance Record**

Shea Chemical Corp., Jeffersonville, Ind., recently reported its number one phosphorus furnace, at its Columbia, Tenn., plant, in "remarkably good condition" after its run of nearly four years without interruption for internal inspection or repair. The furnace was started up in January, 1953. At that time it was the largest phosphorus furnace ever constructed.

According to O. D. Crosby, production vice-president, the furnace, which is now in the process of being enlarged, was watched closely throughout its entire operational period. "Each time our evaluation had been that the furnace could be operated for an additional period without endangering the furnace crucible," he said. "Prior to shutdown, we again appraised its probable condition. Performance was satisfactory and it was our opinion that the furnace could still continue operation."

—★—

#### **Gair Advances La Touche**

Burford La Touche, Jr., has been named superintendent of the Richmond, Va., fibre board container plant of Robert Gair Co., New York, it was announced recently by J. P. Greiveldinger, production manager of container operations. Mr. Touche joined Gair in 1946 and was appointed personnel manager and purchasing agent of the Richmond plant in 1949.

#### **In New Dow Posts**

Two appointments in the sales division were announced last month by Donald Williams, vice-



Leo B. Grant

president and director of sales of Dow Chemical Co., Midland, Mich. Leo B. Grant, formerly manager of the New York sales office, has been named to the newly-created position of manager of the chemicals department with headquarters in Midland. James Day has been chosen to succeed Mr. Grant in the New York post. The appointments become effective January 1.

Mr. Grant joined Dow in 1927 and was associated with the magnesium department for 20 years. In 1948, he was transferred to the executive department in New York, and a year later was named manager of the New York sales office.

Mr. Day joined Dow in 1936 as a research chemist. Three years later he was transferred to the

James Day



firm's Midland sales office where he served as chemicals salesman, manager of pharmaceutical sales and manager of fine chemical sales. He was appointed to the New York executive staff in 1952.

—★—

#### **Charles A. Heilmann Dies**

Charles A. Heilmann, 63, active in the soap industry in various technical and management capacities for the past 45 years, died Nov. 4, at his home in Barberton, O., after an illness of several months.

Born in Staten Island, N. Y., Mr. Heilmann learned the trade of soapmaking at the Port Ivory, N. Y., plant of Procter & Gamble Co., Cincinnati, where he was employed from 1911-22 as a kettle operator in the soapmaking department. Following four years abroad, where he served as a soapmaker for companies in Hong Kong and Manila, Mr. Heilmann returned to this country as superintendent of the St. Louis plant of Cremoline Disinfectant Co., St. Louis.

In 1929, he joined Harris Soap Co., Buffalo, as superintendent of the kettle room. From 1933-38 he was employed as soapmaker for the Mt. Hood Soap Co., Portland, Ore. and for the next 11 years he worked as a soapmaker for Lanman & Kemp-Barclay & Co., New York. In the latter post, Mr. Heilmann served Lanman in its New York, Barranquilla, Colombia, and Caracas, Venezuela plants.

In 1949, Mr. Heilmann joined Productos de Tocador, Caracas, Venezuela, as soapmaker of the company's "Joy" toilet soap. He became superintendent of the toilet soap plant of Panamena de Aceites, S.A., Panama City, Panama, in 1952 and two years later he joined John R. Wald Co., Huntingdon, Pa., to supervise construction of a soap factory in the Kentucky State Penitentiary, La Grange, Ky. In January of this year, Mr. Heilmann joined Kamen Soap Products, Inc., Barberton, O., as supervisor of the firm's Barberton plant.

He is survived by his widow, Josephine Barberton, and a daughter by a previous marriage.

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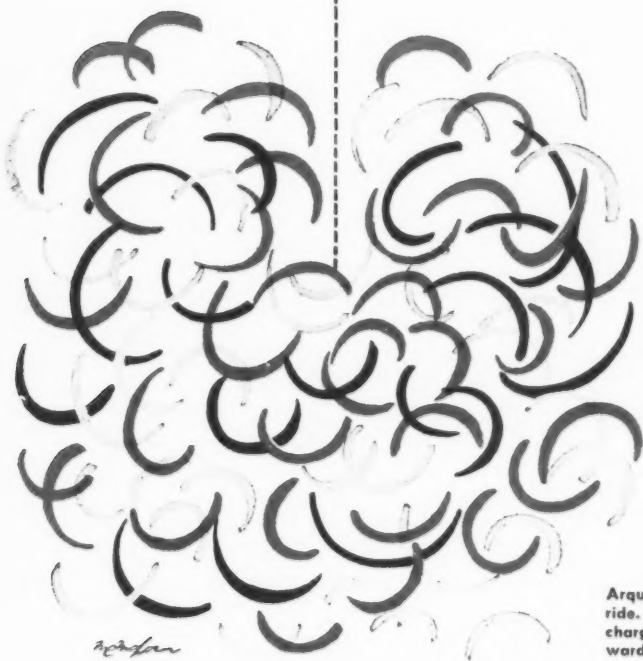
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Color 5¼" Lovibond Red .....	0.7 max.
Color 5¼" Lovibond Yellow .....	2.5 max.
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Saponification Value .....	208 — 212
Acid Value .....	207 — 211
Iodine Value (WIJS) .....	5.0 — 6.5

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*(100% active nonionic ethylene oxide condensate)*

A powerful, low foaming detergent over wide temperature ranges.

Compatible with soaps, anionics, cationics; effective in solution with metal salts and alkaline builders.

Soluble in wide range of organic solvents and electrolytic solutions.

Suggested uses—automatic laundry and dishwasher detergents, car wash powders, wall and floor cleaners.

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*(100% active alkylolamide condensate)*

Excellent detergency on fabrics.

High foaming, a good wetting agent with low viscosity curve.

Effective with alkaline builders.

Suggested uses—Dairy cleaners, household degreasers, wax emulsions.

#### **HYONIC FS**

*(100% active lauric acid alkylolamide condensate)*

Superior foam stabilizer for anionics.

Remarkable thickening action over a wide range of concentrations.

Non-corrosive—can be stored indefinitely.

Excellent detergent and wetter and shows remarkable synergism when blended with anionics or nonionics.

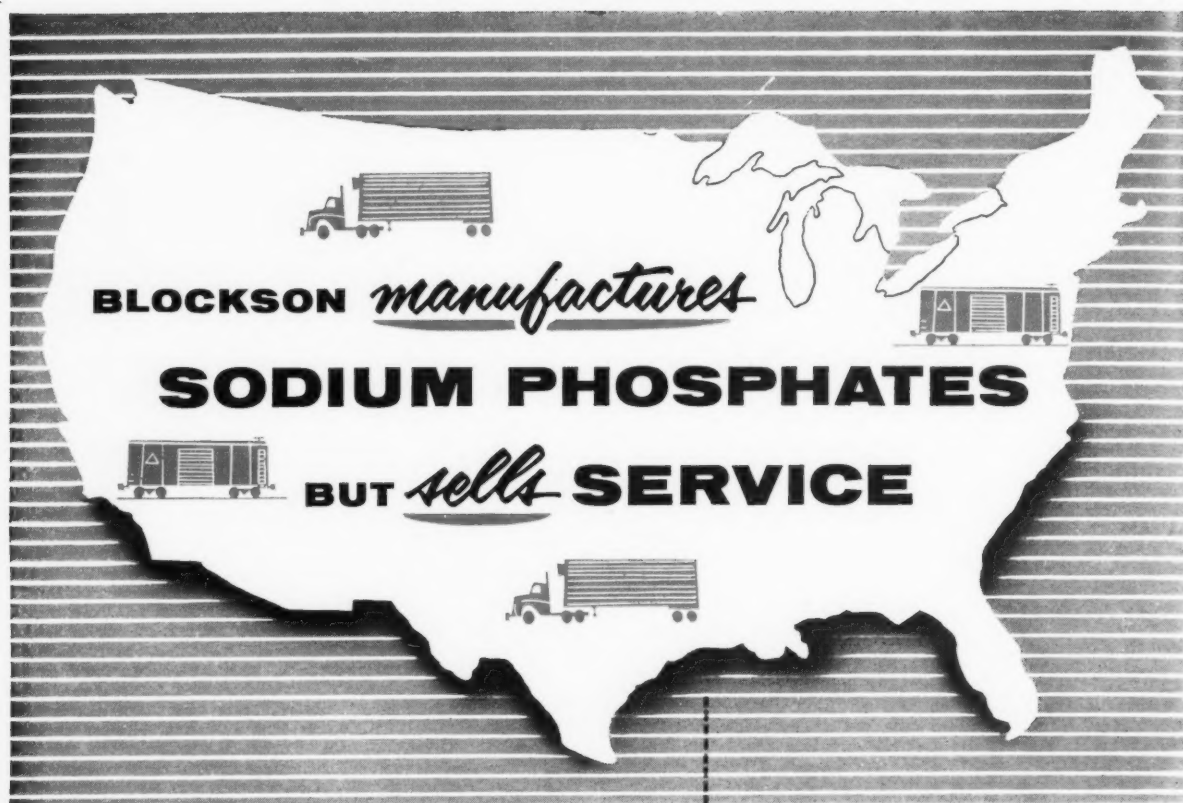
Suggested uses—liquid dishwasher, clear liquid shampoo, bubble bath.



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There is a reason for that, too. At Blockson, production and sales are so closely coordinated that a single collect phone call is all that is required to expedite your unforeseen needs and get your sodium phosphates en route the very same day if it is humanly possible, and most frequently it is.

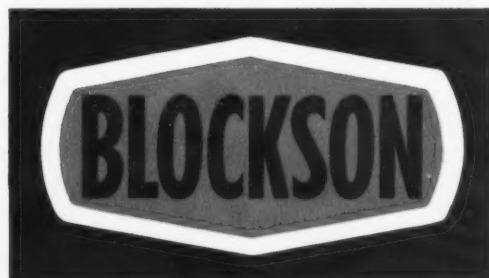
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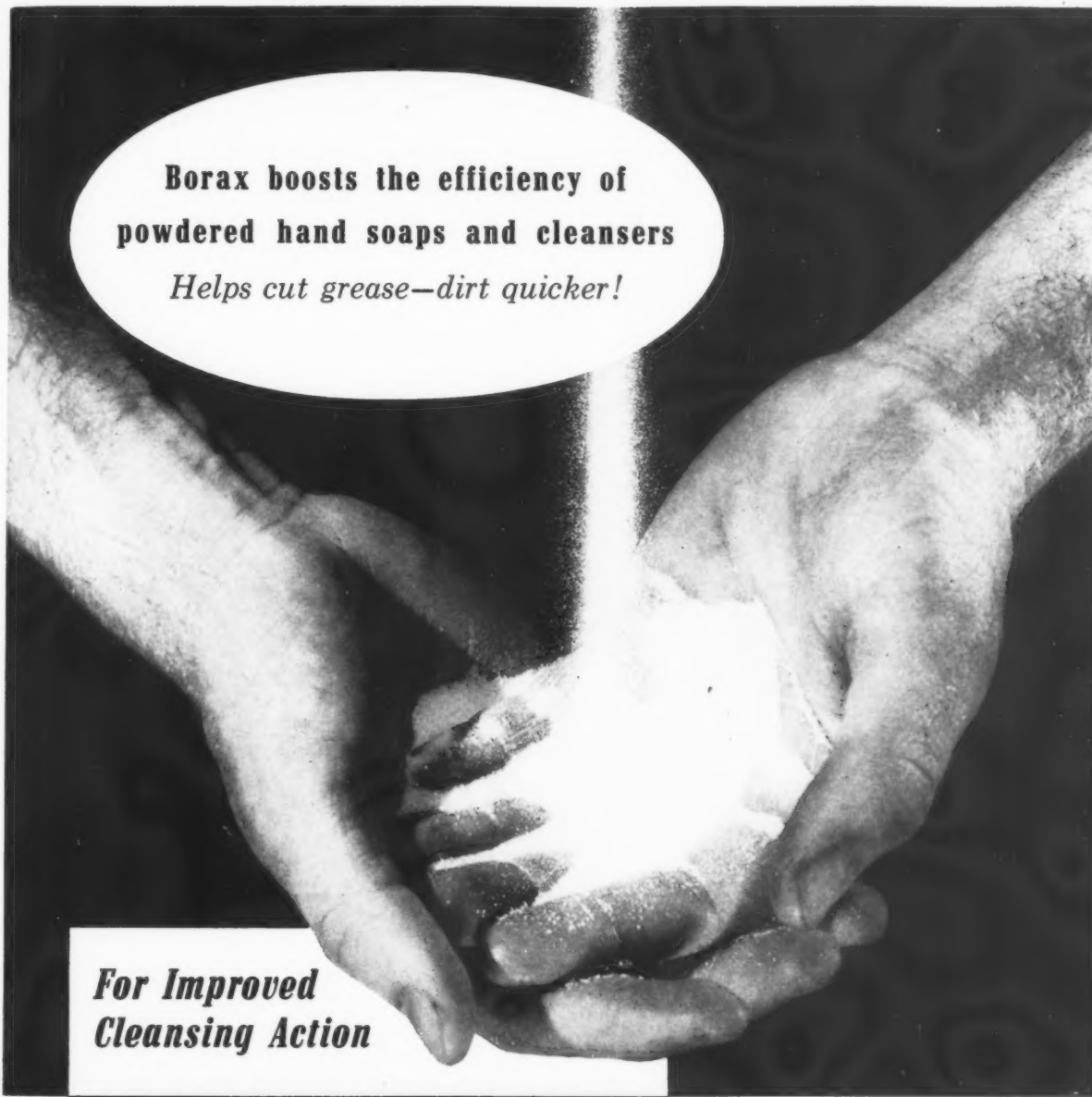
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- Hydrofluoric Acid
- Sulfuric Acid
- Sodium Fluoride
- Sodium Silicofluoride
- Hygrade Fertilizer
- Tear® 120  
NATURAL SURFACTANT







**Borax boosts the efficiency of  
powdered hand soaps and cleansers**

*Helps cut grease—dirt quicker!*

***For Improved  
Cleansing Action***

## **GRANULAR BORAX**

**NOW AVAILABLE TO YOU IN SPECIAL UNIFORM MESHES  
IN A WIDE VARIETY OF GRAIN SIZES.**

To make your powdered hand soaps and cleansers work better in any water, *add BORAX!* It makes all water feel velvety soft; makes any powdered soap more effective. A Borax-Soap combination cuts through grease and dirt like magic! You'll find our granular Borax is just right... free-flowing, 100% soluble, free of grit. *Write for Bulletins and Samples.*

**United States Borax & Chemical Corporation**

PACIFIC COAST BORAX COMPANY DIVISION

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**Other Borates of Interest to  
Chemical Specialty Manufacturers...**

*Now Available in Commercial Quantities*

**FINE GRANULAR BORAX**

*In special screen sizes*

**BORAX 5 MOL**

*Pentahydrate form of Sodium Tetraborate*

**SODIUM METABORATE**

**SODIUM PENTABORATE**

**POTASSIUM TETRABORATE**

*Granular*

**POTASSIUM PENTABORATE**

*Granular and Powdered*

**POLYBOR** ®

# PILOT

## DETERGENTS

**CONCENTRATED QUALITY CUTS COSTS**

### HD-90

90% Minimum active  
dodecyl benzene sodium  
sulfonate flake

### SF-96

96% Minimum Active  
dodecyl benzene sodium  
sulfonate flake

### DBSA

96-98% Dodecyl benzene  
sulfonic acid

### TS-60

60% Triethanolamine  
sulfonate liquid

**MORE DETERGENT SUDS PER DOLLAR**

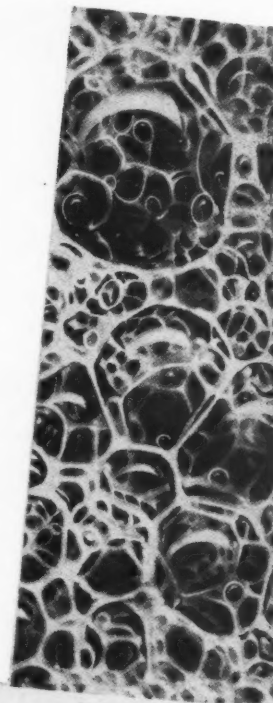
**10% HIGHER CONCENTRATION AT EQUAL COST**—That is what these unique sulfonates make available to you. The four products above and those listed below give new possibilities in detergent formulation.

- **AP-40** AMMONIUM SULFONATE IN ALCOHOL
- **SP-50** SODIUM DODECYL BENZENE SULFONATE PASTE
- **KP-50** POTASSIUM DODECYL BENZENE SULFONATE PASTE
- **ST-35** SODIUM TOLUENE SULFONATE SOLUTION

More detergent suds *immediately* increase consumer acceptance for your product! Cold processing by PILOT at temperatures below freezing produces superior sulfonates more homogeneously effective for such use as household suders, industrial detergents and scouring powders. In both dry powders and in liquid solutions, PILOT sulfonates are unique in concentration and purity levels.

Cold processing eliminates undesirable side reactions, hydrocarbon odors, and any rearrangement of the molecular structure. PILOT concentration and low sulfate properties *eliminate filtering*; give liquids the highest sudsing and cleaning powers obtainable.

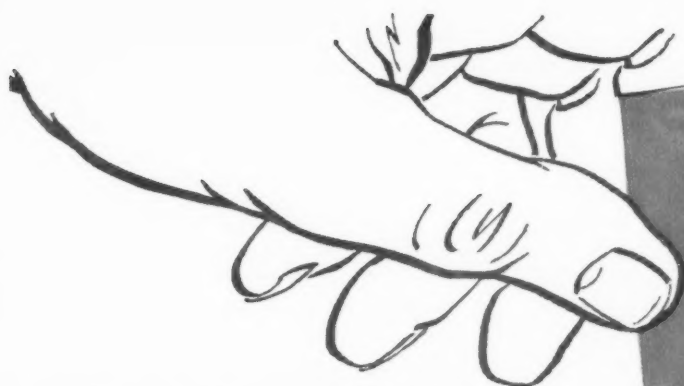
Write today for formulas and samples of any of the PILOT concentrates. Only PILOT features highest concentration and premium quality at competitive prices! Immediately available in quantity lots.



**PILOT Chemical Co.**

215 WEST 7th STREET • LOS ANGELES 14, CALIFORNIA

- Manufacturers of
- Sulfonic Acid
- Dodecyl Benzene Sulfonates
- Sodium Toluene Sulfonate



## WRITE FOR THIS FOLDER

See why and how Swift's Stearic Acids  
invite comparison . . .

If this folder reported in detail all the laboratory testing and research that have gone into its preparation, it might take you 10 hours to read. But you can read it from cover to cover in 10 minutes—and throw it away when you're through!

But, toss it or treasure it, if *you* use stearic acid there's a story in this folder for you. It's quick, it's basic and it's documented—it's this:

*Swift's Stearic Acids invite your comparison on the basis of color, color and heat stability, freshness and application purity to that of any product manufactured for similar use.*

The folder reports on exhaustive comparative tests made between Swift's Stearic Acid and as many as 7 similar products on the above points. Reduced to their essentials, the results of these tests mean this to you:

Swift's Stearic Acids are shipped fresh to *stay* fresh.

Swift's Stearic Acids are bland in odor, stable in color.

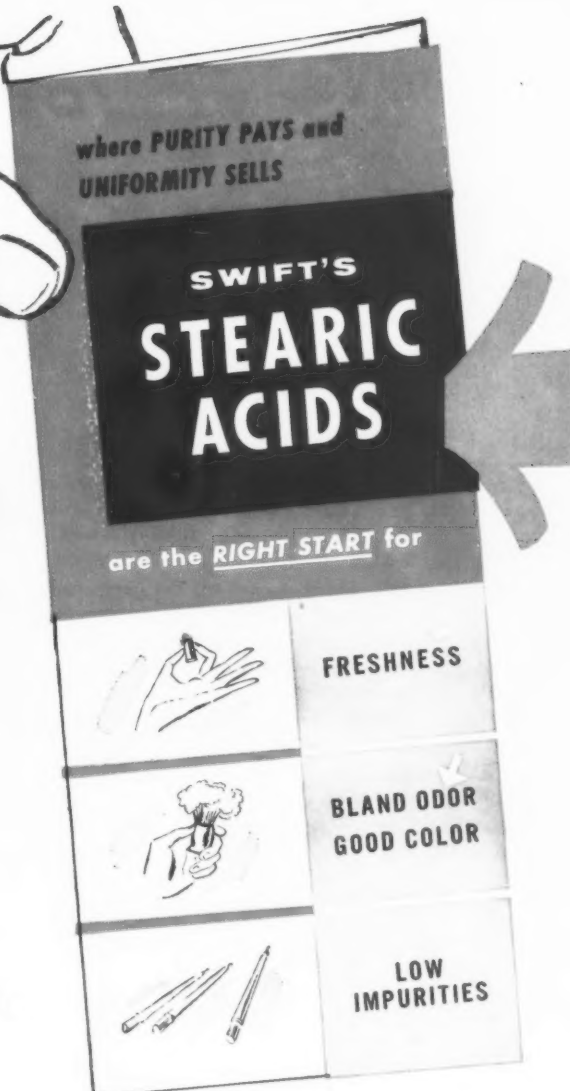
Swift's Stearic Acids are the *right* start if purity pays and uniformity sells in your business.

Write for the folder—see what we *say*, then write for a trial order and see what we *mean* when we say . . .

ONE TRIAL IS BETTER  
THAN A THOUSAND CLAIMS



*To Serve  
Your Industry Better*



Oleic Acid (Red Oil) • Animal Fatty Acids • Textile Processing Oils • Stearic Acids • Hydrogenated Fatty Acids • Larex (Swift's Lard Oils) • Neatex (Swift's Neat's-foot Oils) • Spermaceti U.S.P. • Hydrogenated Glycerides • Sperm Oils • Glycerine • Anti-Foam Agents • Monoglycerides • Sulfonated Oils • Palmex (for Steel Mills) • Tallows • Vegetable Fatty Acids

### USE THIS COUPON FOR FURTHER INFORMATION

Swift & Company, Industrial Oil Dept.  
1834 165th Street  
Hammond, Indiana

O-21

Please send data on the following products:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ ☐ Send Stearic Acid folder.

Name \_\_\_\_\_ Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_



Like a claw, Dow chelating agents firmly grasp and hold metal ions in solution, preventing them from undergoing the usual chemical reactions. But why so many Versene products? Are they effective on all metallic ions? We hope this continued discussion provides the answers, and further clarifies what chelates will do—and won't do.



# The Chemistry of Chelation: Part III

*Specific agents for specific conditions • Caustic solutions*

*Changing solutions • Industry responds*

In all, Dow offers 15 commercially available chelation products. These are grouped in the Versene®, Versenol®, and iron specialty (Versene Fe-3 Specific®, Versene T®, Versene S) series. The Versene and Versenol series were discussed in Part II of this advertisement. When used in solution, the Versene products inactivate practically any polyvalent metallic ion they contact. They accomplish this by actually forming a new compound in which the metal ion becomes a member of a stable inner ring structure in the molecule, so that no reversion or breakdown can occur. However, no one chelating agent can complex all metal ions under all conditions. One of the major considerations determining which chelating agent to use is pH. To illustrate, let's look at iron-containing systems, among the most troublesome for chemical processors.

## SPECIFIC AGENTS FOR SPECIFIC CONDITIONS

The first amino acid type chelate made commercially available was Versene, the tetrasodium salt of EDTA\*. It is the most versatile member of the series for it ties up most polyvalent metal ions throughout the pH range—with this notable exception: It is excellent for complexing iron in the acid range only. For economy above pH 7, we must look to a later development, Versene Fe-3 Specific.

The most effective and efficient agent known for complexing iron in the mildly alkaline pH range, Versene Fe-3 Specific also chelates copper, nickel, and cobalt—but has no effect on calcium, magnesium or other common non-transition metal ions. Where calcium and magnesium along with iron cause difficulty in alkaline solutions, a blend of Versene and Versene Fe-3 Specific is the answer. This mixture, called Versene Fe-3, complexes all of these troublesome ions. Its Versene Fe-3 Specific content is sufficient so as to automatically take care of the quantity of iron normally encountered in hard water.

Versene Fe-3 is also considered an important adjunct to the polymerization of synthetic rubber. It controls the concentration of the iron ions catalyzing the reaction, thus insuring a more-uniform, higher-quality end product.

## CAUSTIC SOLUTIONS

For chelating iron in caustic solution, another agent enters the picture—Versene T. This material ties up iron in a wide range

of caustic solution concentrations. It also complexes calcium, magnesium, nickel, cobalt, and other metal ions—throughout the normal pH range as well as in caustic solutions. In the presence of a suitable reducing agent, Versene T functions effectively as a rust remover—and without the drawbacks of acid cleaners. Versene T thus finds widespread use in boiler and heat exchanger cleaning, textile processing, etc.

Another effective chelating agent that is selective for iron in the free caustic pH range is Versene S. Since it will not chelate alkaline earth ions, Versene S is especially suitable for use in silicate-lined textile processing kiers.

## CHANGING SOLUTIONS

In special instances where a processing solution is strongly alkaline at first, then changes to neutral or to acidic, iron can be controlled with a mixture of Versene T and Versene Fe-3 Specific. In this combination, the Versene T component complexes the iron when the solution is caustic. As the pH drops, Versene Fe-3 Specific takes over.

## INDUSTRY RESPONDS

Every day, Dow chelates are finding new and expanding usage—in textile manufacturing and rubber processing, in soaps, synthetic detergents, cosmetics, and pharmaceuticals. Their ability to control ionic concentrations, to eliminate product breakdown, to smooth out production and save money, has brought enthusiastic response from industry. That they are solving a multitude of processing problems is true. But chelates are no cure-all. To uncover their profitable uses, we will help in any way we can. Write us on your company letterhead for application data and technical assistance. Technical Service and Development, Department SC 913H-2. THE DOW CHEMICAL COMPANY, Midland, Michigan.

\*Ethylenediaminetetraacetic acid

## THE NEXT TOPIC IN THIS SERIES

### PART IV

Applications in specific industries (formulation of alkaline cleansers—stabilization of hydrogen peroxide and kier boiling in textile processing—uniform control of trace metal catalysts in polymerization of synthetic rubber—other industrial applications).

you can depend on DOW CHEMICALS





# Announcing . . .

- better foaming
- lighter color
- crystal clear solutions with still higher tolerances for alkalies and electrolytes

## SALT-FREE AMPHOTERIC SURFACTANTS by Miranol

These salt-free surface active agents have all the qualities of the well known MIRANOL "M" SERIES\* plus many more, such as tremendously increased foam, still further improved stability and extended range of compatibilities.

### NOTE THESE ADVANTAGES:

Combined in a Single Economical Product

- MORE FOAM, GREATER STABILITY
- WIDER VERSATILITY THAN ANY OTHER SYNTHETIC DETERGENT TYPE AVAILABLE TODAY
- COMPATIBLE WITH ANIONIC, CATIONIC AND NON-IONIC AGENTS
- NO SKIN OR EYE IRRITATION
- HIGHEST CHEMICAL STABILITY
- LIQUID PRODUCTS CAN BE FORMULATED CONTAINING UP TO 20% OR MORE ALKALI AND/OR ELECTROLYTES
- COMPLETE FOAM COMPATIBILITY WITH SOAP

**Our Research Department will answer your Questions or Detergent Problems.**

\* U. S. Patent No. 2,528,373

**THE MIRANOL CHEMICAL COMPANY, INC.**  
275 COIT STREET, IRVINGTON, N. J.  
Tel.: ESsex 4-2500

*Manufacturers of Synthetic Organic Detergents for All Industries*

# miranol

**Sample Quantities Now Available of the Following:**

#### MIRANOL CM-SF CONC.

*Coconut Derivative*

Clear product for dishwashing, floor cleaners, wax removers, industrial cleaners, liquid steam cleaner compounds and bubble bath.

#### MIRANOL C2M-SF CONC.

*Coconut Dicarboxylic Derivative*

Specially recommended for the formulation of shampoos, hand soaps, rug shampoos and all such household and/or industrial cleaner formulations where complete absence of irritation is desired.

#### MIRANOL SM-SF CONC.

*Capric Derivative*

Clear product, low wetting qualities for shampoos, medicated shampoos, rug and fabric shampoos.

#### MIRANOL HM-SF CONC.

*Laureic Derivative*

General purpose detergent and wetting agent. Upgrading of detergent and soap formulations.

#### MIRANOL OM-SF CONC.

*Oleic Derivative*

Emulsifier. Softener for natural and synthetic fibres and general purpose detergent.

#### MIRANOL DM-SF

*Stearic Derivative*

Low priced snow white paste. Hair rinse. Textile softener, can be used as an anionic or cationic product. Will not yellow with heat application.

# ...about detergents

## SOAPS AND DETERGENTS

by E. G. Thomssen and John W. McCutcheon

**T**HE latest and only complete American book on soap manufacture. Primarily a practical book for the production man, chemist, or executive, it covers such subjects as soap making methods, equipment and machinery, raw materials, perfuming and coloring, glycerine recovery, and properties and applications of finished soap and detergent products. No soap or detergent laboratory, plant, or office should be without this standard volume.



## SYNTHETIC DETERGENTS

by John W. McCutcheon



**A** PRACTICAL 435-page book concerned primarily with the detergent compounds defining the various types of synthetics as to class, manufacture, application and processing. In addition to a thorough analysis of the manufacturing processes involved and a discussion of source and preparation of raw materials, the author also presents an adequate theoretical background on the fundamentals of surface activity and the relation of surface activity to detergency, emulsification, foaming, wetting and dispersion. This text will be of interest to all in the detergent field, including those concerned with the manufacture, packaging, application and processing of surfactants, as well as those supplying raw materials.

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Add 3% sales tax if in New York City

### MAC NAIR-DORLAND CO.

254 West 31st St., New York 1, N. Y.

Enclosed is our check for \$. . . . . Please send the following book(s):

. . . . . Soaps and Detergents, Price \$9.00 in U.S.A.; \$9.50 elsewhere.

. . . . . Synthetic Detergents, Price \$7.10 in U.S.A.; \$7.60 elsewhere.

Company . . . . .

Address . . . . .

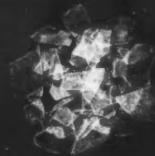
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By . . . . .

# Exclusive!

*Sodium Hexametaphosphate  
in five highly soluble forms*

## WESTVACO HEXAPHOS®

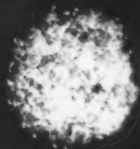


**FLAKE**

**GRANULAR 1**



**GRANULAR 2**



**POWDER**



**PLATE**



A true glassy phosphate that is essentially neutral (pH 6.7-7.2) and extremely soluble, Westvaco HEXAPHOS can be used in highly concentrated solutions . . . frequently a money-saving advantage where stock solutions are being fed. Westvaco HEXAPHOS contains optimum phosphorus pentoxide for maximum sequestering and water-softening effectiveness.

Backed by our production of elemental phosphorus at Pocatello, Idaho, Westvaco has completely integrated HEXAPHOS output at both Carteret, New Jersey and Newark, California. Thus, we provide uniformly high quality, dependable supply and fast delivery to points East or West.

P.S. We can also furnish other glassy sodium phosphates with various  $\text{Na}_2\text{O}-\text{P}_2\text{O}_5$  ratios to meet special requirements. A letter outlining your needs will enable us to give you detailed information.

**Westvaco®**  
CHEMICALS

**fmc**  
FOOD MACHINERY  
AND CHEMICAL  
CORPORATION

**Westvaco Mineral Products Division**  
**FOOD MACHINERY AND CHEMICAL CORPORATION**

161 E. 42nd St., New York 17 • Chicago Cincinnati Houston Philadelphia Newark, Calif.

**FMC CHEMICALS INCLUDE:** BECCO Peroxygen Chemicals • WESTVACO Alkalies, Chlorinated Chemicals and Carbon Bisulfide • NIAGARA Insecticides, Fungicides and Industrial Sulphur • OHIO-APEX Plasticizers and Chemicals • FAIRFIELD Pesticide Compounds and Organic Chemicals • WESTVACO Phosphates, Barium and Magnesium Chemicals

# Two Outstanding Forms of Nacconol®

Economical

**SUPER DENSE BEAD**

*Nacconol DBX*

The newest form...designed to answer the industry's need for a versatile bead as dense as most flake materials. It essentially eliminates dusting, does not tend to agglomerate and assures more uniform mixtures.

**LIQUID**

*Nacconol SL*

Unique base for liquid detergents. Looks clean, smells clean. Excellent foaming, very low haze-point, emulsifies grease and oil and is compatible with anionic and non-ionic materials. Cuts production costs. Requires no dissolving, has low salt content, needs no extra stabilizer.

For better looking detergent products with better sales appeal, base your formulations on NACCONOL the pioneer detergent. You are assured of complete compatibility with your production requirements because NACCONOL is made in a physical form for every purpose. Samples of the two described here, or other NACCONOLS in flake, bead, granular or powder forms...are available without cost or obligation.

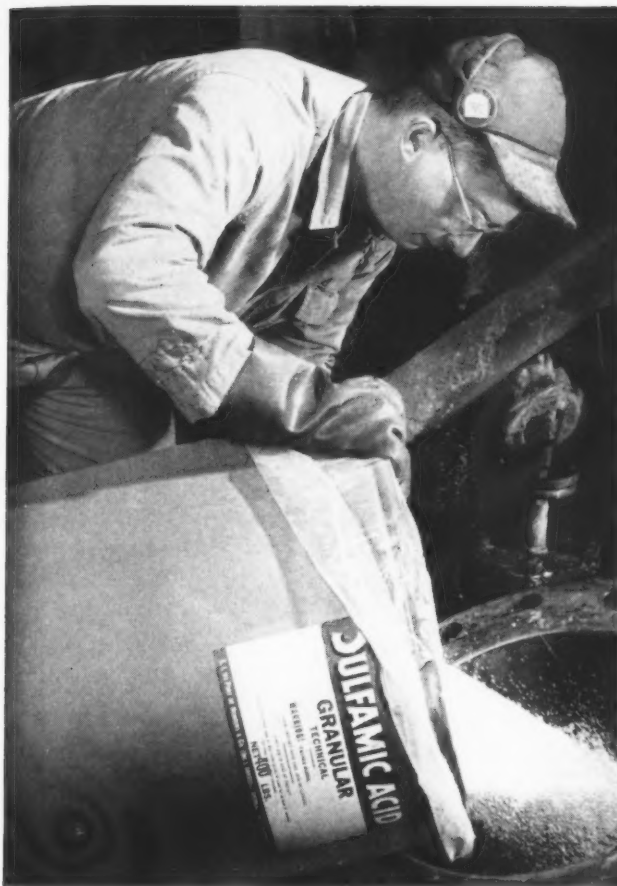
And when you order NACCONOLS shipments will be made quickly from nearby warehouse stocks.



**NATIONAL ANILINE DIVISION**  
**ALLIED CHEMICAL & DYE CORPORATION**  
**40 RECTOR STREET, NEW YORK 6, N. Y.**

Boston Providence Charlotte Chicago San Francisco Atlanta  
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# Du Pont SULFAMIC ACID

now available in  
granular as well  
as crystal form

## Unbeatable for formulating scale removers and acid-type cleaners

The new free-flowing . . . non-caking granular sulfamic acid is another advance in the production of practical, easy-to-handle efficient acid cleaners. Sulfamic acid will handle the toughest cleaning job. Whether you are producing cleaners for copper-bottom pans, air-conditioning equipment, or boilers, sulfamic acid

enables you to produce a cleaner that will do it fast, safely, and economically *without fumes*. And metal corrosion is easily controllable in sulfamic-based cleaners.

What's more, sulfamic acid eliminates special-handling procedures . . . glass breakage or acid-spilling damage . . . expense of returnable containers.

### HERE'S WHERE DU PONT SULFAMIC ACID CAN BE USED!

Metal Cleaners and Brighteners	Dairy Milk-Stone Cleaners	Marine Cleaners
Brick and Concrete Cleaners	Paper-Mill Felt and Wire Cleaners	Toilet-Bowl Cleaners
Dishwashing-Machine Cleaners	Brewery Cleaning	Copper Cleaners
Sugar-Evaporator Descalers	Heat-Exchanger Cleaners	Silver-Dip Cleaners
Food-Processing Equipment		Stainless-Steel Cleaners

**CRYSTAL GRADE.** 99% active material for synthesis and chemical uses where high purity is required.

**GRANULAR GRADE.** A specially prepared, new, free-flowing, non-caking sulfamic acid designed for use in your formulated compounds.



## DU PONT SULFAMIC ACID



BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

E. I. du Pont de Nemours & Co. (Inc.)  
Grasselli Chemicals Dept., Room N-2539  
Wilmington 98, Delaware

I would like more information about Du Pont sulfamic acid for use in:

Name \_\_\_\_\_ Position \_\_\_\_\_

Firm \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

## In Skin Cleansers, Too, THE KEY IS CMC

In liquid detergents, Hercules® CMC holds dirt and even stubborn grime in suspension so that they are always washed down the drain; never wiped off on the towel.

For example, "Neutra-Foam" Skin Cleanser, described by the manufacturer as "one of the new, mild, non-alkaline synthetic skin detergents," contains CMC to help form the rich abundant lather which rinses easily and thoroughly in hot or cold, hard or soft water.

Leading formulators of liquid detergents have discovered that economical Hercules CMC contributes to improved product performance, increased customer satisfaction. If you have not tried CMC for yourself, we'll be glad to send you a testing sample. Write Hercules for full details.

**HERCULES**




"Neutra-Foam" Skin Cleanser is a product of Stepan Chemical Company, 1353 North Branch St., Chicago 22, Ill.

Virginia Cellulose Department  
**HERCULES POWDER COMPANY**  
INCORPORATED  
961 Market St., Wilmington 99, Del.




## ... in brief

 **SYNTHETIC BAR . . .** That 1957 is likely to see several new and improved synthetic toilet bars come to market, there is little doubt. Developments in several products which are termed successful are reputed to have gone much further than is generally known. Up to date, we have really failed to see a good synthetic bar which compares favorably in all respects with a bar of good toilet soap. But now, we are told, the new ones and the good ones are upon us, ready for market. The bugs have been licked and the products perfected.

Toilet soap makers who do not have a synthetic bar now seem to be notably worried for the first time. Maybe they figure that sooner or later it had to come, and this is it. The last bastion of soap is about to be battered down and the soap kettle after some two hundred years of service to mankind is about to be junked. Anyway, judging from all the skuttlebutt we hear in the soap trade, at least a dozen new synthetic toilet bars, all the height of perfection and with all the old problems licked, will make their debut come 1957. We await their advent with some fear wondering what they might do to our half-billion pound toilet soap output.


\* \* \* \* \*

 **AEROSOL LABELS . . .** Precautionary labeling of aerosols apparently leaves much to be desired. Prior to judging in the 1956 Aerosol Package Contest, a subcommittee of the Precautionary Labeling Committee of CSMA carefully examined the 200 entries in the contest for precautionary label statements. It found only 10 per cent of all the packages properly and completely labeled according to recommendations of the committee. Labels on 50 per cent were held to be "adequate" while 36 per cent

were classified as "inadequate." Four per cent of the packages carried no precautionary statements whatever and were disqualified in the Package Contest upon recommendation of the subcommittee.

In view of the fact that there are safety factors involved in the storage and use of aerosols, there seems little excuse for forty per cent of all products to carry inadequate labeling. Some of the offenders are large companies who should know better. Granted that poor or improper labeling is common in chemical specialties, sight cannot be lost of the fact that aerosol marketers have a special responsibility in the direction of safety, more so than makers of other products. That future lawsuits might be averted by closer attention to correct precautionary labeling seems obvious. But some marketers just ignore the subject. We wonder if they appreciate the seriousness of the matter.

\* \* \* \* \*

 **COLOR . . .** Color is the order of the day. Once was the time when things were white, stoves, refrigerators, bathrooms, and even toilet soaps. In fact, toilet soaps which were not true snowy white were sneered upon. The slightest trace of yellowness or translucency and the sales department and competitors looked down their noses. The public who used the soap probably never noticed the difference, but in the good old soap trade, it was different. After all, a soaper has some pride, doesn't he? He doesn't have to take a competitor's sneers, does he? So snow white tallow and titanium dioxide were the order of the day. But we don't believe the public ever gave a damn.

Now, comes the age of color in toilet soaps. Exactly why, we haven't found out yet. Maybe it's a sort of grab for more shelf space in the

Formulate to fit any industrial  
cleaning job with the

# RENEX<sup>®</sup> "600"

## DETERGENT LINE



You can hit *all parts* of the industrial cleaner market by using the new: RENEX "600" family of detergents in your formulas.

The line of polyoxyethylene nonyl phenol detergents gives you a full range of characteristics to build formulas with the cleaning qualities you want . . . from light duty products suitable for wall and floors, to heavy duty degreasing.

In the RENEX "600" series, you have a broad choice of water and hydrocarbon solubilities, cloud point, detergency, foaming characteristics, compatibility, emulsifying action, wetting and re-wetting action.

### A complete line—with a full range of detergent qualities

RENEX 648	5	mols. ethylene oxide
RENEX 697	6	mols. ethylene oxide
RENEX 688	8	mols. ethylene oxide
RENEX 698	9-9.5	mols. ethylene oxide
RENEX 690	10	mols. ethylene oxide
RENEX 678	15	mols. ethylene oxide
RENEX 650	30	mols. ethylene oxido

CHEMICALS  
DIVISION  
**ATLAS**  
POWDER COMPANY  
WILMINGTON 99, DELAWARE  
In Canada: Atlas Powder Company, Canada, Ltd.  
Brantford, Ontario, Canada



supermarkets. Maybe it's a gimmick to match the wide range of bathroom colorings of this day and age. Maybe it's because a competitor started the idea. But these are just guesses. What's more important, we're worried about what's going to happen in toilet soap marketing in 1957. All these different colors could add one more complication in the soap selling rat race.

\* \* \* \* \*



**INSECTICIDES . . .** Because the number of bugs which showed up in 1956 was considerably below normal, the over-all sale of household and industrial insecticides dropped off. This fact has been no secret in the trade for some months. But that's the story for 1956. What happens in 1957? What happens to manufacturers' sales? What effect will 1956 carry over in dealers' hands have on these sales?

From what we can gather, insecticide carry-over by dealers is considerably larger than normal. Some material was sent back for credit as is always the case, but mostly unsold insecticides are now reposing on the shelves of dealers' store rooms. That this will interfere with 1957 sales by manufacturers, and is already interfering, there seems to be little doubt. Sort of a pessimistic view, but we might as well look the facts squarely in the face.

Increased advertising may or may not help insecticide sales in 1957. The law of averages is likely to help more—the chances of greater bug infestation after a couple of lean years. It always seems to happen that when dealers let insecticide stocks dwindle, demand zooms upward. Let's hope this is the case in 1957.

\* \* \* \* \*



**LABELS . . .** Probably convinced that the public won't read labels anyway, several marketers of household chemical specialties are getting away from the small type and are turning more and more to illustrations to show how the product is used. Pictures, whose meaning is clear at a glance, may be the answer to this whole question of labeling.

To be sure the problem is not completely licked yet, particularly on small packages where space does not permit the use of this technique.

However, on larger packages, to which the current trend is unmistakable, manufacturers and marketers are taking advantage of the extra space to show how to use their products. In addition, in the increasingly important self-service type of retail outlet, easy-to-read directions give the product an additional sales advantage. If the product seems easier to use than a competitive one, there is no question which the housewife will choose.

Maybe today's rough competition has provided an answer to a problem that many marketers and packaging people had despaired of ever solving.

\* \* \* \* \*



**INDUSTRIAL MARKETS. . .** Often we are asked the question, what percentage of this or that goes into the industrial and institutional markets? Floor waxes, insecticides, aerosols, disinfectants, detergents, soaps and what not? The industrial market for these products is large and is growing, that we know. We also know that the housewife daily takes a big tonnage of all these products from the shelves of local stores, a total tonnage far in excess of industrial uses. So, recently we engaged in a guessing contest with a market expert, so-called, in many of the products noted. The figures we came up with may or may not be interesting.

In the case of household insecticides, a total of over one hundred million dollars yearly, we guess that Mrs. McGuff, the housewife, used about 70 per cent. For floor waxes, also a market in excess of a hundred million, our guess is 60 per cent for Mrs. McGuff and 40 per cent for industry. Aerosols, we figure, 80 per cent are used in the home. The same for the tremendous market in detergents and soaps,—well in excess of a billion dollars. In disinfectants, we figure 30 per cent for Mrs. McGuff and 70 per cent for institutions and industry. As for scouring powers, we think it's about the same as soaps. For dishwashing compounds, industry and institutions are the big users. For floor scrub compounds, we figure industry uses over 90 per cent. And so it goes.

Really, exact figures are scarce. Surveys and census figures are usually incomplete. We have a hunch that guesses by old timers who know the market are usually closer to the facts.

# G-11<sup>®</sup>

(HEXACHLOROPHENE U. S. P.)

with its unique degerming and antiseptic action, was the key to increased sales and broadened markets for all these products:

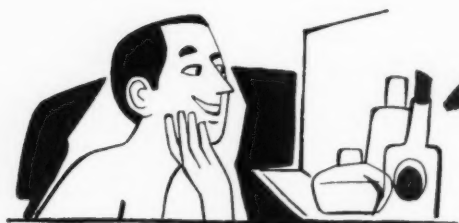


Waterless Hand Cleaners  
Detergents  
Shampoos



Deodorant  
Antiseptic  
Surgical Scrub  
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SOAP and CHEMICAL SPECIALTIES

## as the reader sees it...

### Poison Prevention

Editor:

Your editorial in the October issue on the restriction of the sale of chemicals and medicines to drug stores where a registered pharmacist is in attendance fails to consider some of the safety factors involved. The primary purpose in restricting the sale of dangerous chemicals and poisons to drug stores is to protect the public. The fact that these products are available only in a drug store and not at the corner grocery is in itself a part warning that the product is hazardous and should be treated as such.

The reference which you make to the sale of food is hardly comparable with the sale of poisons. There is no danger involved in the sale of a ham sandwich or a cup of coffee, but there may be in the sale of rat poison or a disinfectant. We understand that storing and handling in the home is of utmost importance in the prevention of accidental poisoning, but a warning issued at the point of sale could also be important. The pharmacist knows and recognizes dangerous products. The grocer does not. Anything which will prevent accidental poisoning should be done.

A. V. M.  
Milwaukee, Wis.

*We still feel that the restriction in the sale of hazardous chemical specialties is not even a part answer to the problem of accidental poisoning. Better labeling and better education, we feel, is the real solution.—Ed.*

### Name Change

Editor:

For about 37 years we have been known to the trade as National Disinfectant Company. In the past 10 years, this name no longer depicts the true nature of the supplies we sell and we are investigating the possibility of changing our name but retaining

the first name of National.

Would it be possible for you to send me a list of the names of any company in the chemical or chemical specialty field or in the janitor supply field, which you may know of whose first name begins with National. We are aware of many companies, such as National Laboratories in Toledo, but in changing our name we wish to create a name to which no company would have an objection.

Lester A. Levy, vice-pres.  
National Disinfectant Co.  
Dallas 26, Tex.

*In addition to asking our readers to give us and Mr. Levy a hand, by sending in company names beginning with National in the fields he mentions, we will make a check of the several trade directories in this office and forward any such names to him. Readers may send in names to us or to Mr. Levy directly at National Disinfectant Company, 2117 Commerce St., Dallas 26, Tex.—Ed.*

### Aerosol Publicity

Editor:

Starting in January, an extensive promotion and publicity campaign is planned for all aerosol products under the auspices of the Chemical Specialties Manufacturers Association. The principal purposes of this campaign are to sell more

aerosol products and to counteract any adverse publicity which may arise. A well-rounded program has been worked out by the members of the Aerosol Market Development and Publicity Committee of CSMA which has been working on this project for well over a year.

The need for a broad market development and publicity campaign designed to increase the sale of all aerosol products has been apparent for some time. Such a campaign can tie in with individual sales efforts for the good of the entire aerosol field. It can help greatly in selling the public on the aerosol principle of dispensing various products and increase their use. Experience shows that similar campaigns in the past have been unusually successful. Ours also can be a real success.

Recently a letter requesting subscription of funds by aerosol fillers and marketers and suppliers of raw materials was sent out. It is the earnest hope of the committee that the response by those who received this letter will be prompt and for the full amount requested.

FRED G. LODES,  
Chairman, Aerosol Market  
Development and Publicity  
Committee, CSMA.

*The need for such a campaign, we believe, is quite apparent. We add our own word to that of Mr. Lodes in a certainty that financial support of the campaign will be both prompt and generous.—Ed.*

Ten-year-old stock exchange authority, Leonard Rose, skipped school for an afternoon to attend the annual stockholders meeting of the Purex Corp., Ltd., South Gate, Calif. Adrien C. Pelletier, chairman and president of Purex, which manufactures bleaches and household cleansers, answers a question from the young stockholder concerning the company program. Leonard won \$100,000 on the television show, "The Big Surprise," (sponsored by Purex) as an authority on the stock exchange.





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General session speakers, left to right, J. G. Pleasants, Procter & Gamble Co., Cincinnati; Roy W. Peet, Association American Soap

& Glycerine Producers; Foster D. Snell, Foster D. Snell, Inc., and James C. Kirk, Continental Oil Company.

## Detergents CCDA Meeting Topic

**D**ETERGENTS based on sugar probably will be marketed early next year, and within the next five to 10 years all toilet soap bars will contain synthetic detergents. These two predictions were made by Dr. Foster D. Snell, head of Foster D. Snell, Inc., New York consulting chemical and engineering firm during the fall meeting of the Commercial Chemical Development Association. The meeting, held in Cincinnati, Nov. 1, had as its theme "Soaps and Detergents." In addition, Dr. Snell predicted that syndets will make inroads into the commercial laundry field, which has heretofore largely resisted the introduction of synthetic detergents.

CCDA's full day meeting devoted to discussions of soaps and detergents from several viewpoints included a general morning session, at which Dr. Snell spoke. Other speakers included J. G. Pleasants, vice-president for research and development of Procter & Gamble Co., Cincinnati, and James C. Kirk of Continental Oil Co., Ponca City, Okla. Mr. Pleasants discussed marketing problems in a talk entitled, "The Public Be Pleased." Mr. Kirk's paper, co-authored by E. R. Baker, reviewed "Development Problems of Chemical Concerns Supplying the Detergent Industry."

During the afternoon ses-

sion, four off-the-record panel discussions covered the following subjects: "Market Development of Large Volume Chemicals in the Soap and Detergent Industry"; "Specialty Chemical Market Development in the Soap and Detergent Industry"; "Application Research by the Supplying Industries in the Field of Soaps and Detergents," and "Establishing New Consumer Products in the Soap and Detergent Industry."

A round-up review of the highlights of the four panel discussions was given by panel chairmen at their conclusion.

Roy W. Peet, manager of the Association of American Soap & Glycerine Producers, was chairman of the morning session.

Other highlights of the meeting, which attracted over 300 CCDA members and guests from the soap and detergent and chemical industries, included the presentation, following lunch, of a marketing case history of "Ban" personal deodorant by R. K. Van Nostrand, assistant advertising director of Bristol-Myers Co., Hillside, N. J. Following an address of welcome by the honorable Charles P. Taft, mayor of Cincinnati, a dinner meeting heard Prof. C. R. Whittlesey of the Wharton School of Finance, University of Pennsylvania, speak on "Facts, Fantasy and

the Future." Mr. Whittlesey's thesis was that inflation is not caused by wage increases. He supported this theory by showing how the wage level of the American working man has been rising steadily over the past 150 years in spite of slumps, depressions and recessions.

The morning session was opened by F. S. Swackheimer, manager of the resins and plastics department of Shell Chemical Corp., New York, with a brief address of welcome. He pointed out that the association currently has 435 members. He introduced Roy W. Peet, chairman of the morning session. Mr. Peet gave a brief review of the early history of soap making in the United States, and pointed out that in the early days of the country all soap was home made. When the beginnings of the soap making industry got underway in the early part of the 19th century, the housewife was glad of it because homemade soap making was such a disagreeable task. The first commercial soap, Mr. Peet explained, was unwrapped and unbranded. Later it was wrapped, branded and advertised. Increased consumption of soap brought about the mechanization of the industry.

The importance of chemistry to the soap industry began to assert itself about 1900, according to Mr. Peet. In fact, he said, it made



Members of Panel 2: J. R. Macon, Atlantic Refining Co.; Dr. V. J. Blinoff, American Alcolac Corp.; Dr. W. E. Elwell, Oronite Chemi-

cal Co., chairman; Dr. Chapin E. Stevens, Antara Chemicals Division, General Aniline & Film Corp., and Jay C. Harris, Monsanto.

possible the synthetic detergents. The introduction of synthetics and other developments have made the housewife's job a lot easier, he pointed out.

As a result of mechanization in the soap industry and correspondingly reduced costs, soap can now be bought for 1/3 of the working hours it required in the 1890's. Wages in the soap industry have risen sharply since the early 1900's. Today, the take-home pay of the average worker in the soap industry is 20 per cent higher than the average of all industrial workers. It is 35 per cent more than the average weekly wage of all workers in non-durable goods industries, and 10 per cent greater than the average weekly wage in durable goods industries.

Reviewing the "Major Trends in Soap and Syndets During the Past Ten Years," Foster D. Snell discussed how synthetic detergents have progressively taken over various fields in which soap was used almost exclusively. "There are two left where soap is still dominant," he said. "The first of these is the laundry field where the user buys bulk soap and adds his own builder and, in general syndets find it difficult to compete. I say 'difficult' because there are commercial laundries which are operating entirely on syndets. The matter is the simple economic one that laundries can buy bulk chemicals such as sodium metasilicate and soap and blend them in proportions which they select cheaper than they can buy a compounded blend. Much of

the power laundry industry is not so very progressive but it carefully inspects both sides of a dollar before spending it. And so long as tallow is cheap, soap made from it will be a low-price commodity.

"The more important field, because the price is not as much of an object, is the toilet bar, which shades right over into the general household bar. There the research problems are colossal. I feel sure that each of the big soapers has had a group working on the problem for at least five years. Each has brought out a bar in test markets. One was a straight synthetic which is expensive and difficult to manufacture. While stated to be offered on national scale, the sales are not yet comparable to those of any of the leading brands of toilet soap. The other two soapers have brought out composite bars containing soap as well as syndet, but they have not moved out of test markets. They can use the blend because in the presence of some other surfactant, the hard water soaps are efficiently and finely dispersed, and do not give the disagreeable effects of lime soaps. In fact, to digress, there are predictions that five or 10 years from now all toilet soap bars will contain enough synthetic surfactant to provide this effect. I predict it will come. One of the major European soap companies is currently planning on doing it.

"Reverting to toilet soap bars, the importance of the field to the soap manufacturer is indicated by the fact that on sales of

solid soaps in the first half of the year, 39 per cent in tonnage and almost 50 per cent in dollar value was in toilet bar form. I have ignored the white and yellow laundry bars in that part of the discussion, although it may surprise you to know that their sales are still not inconsiderable, well over 100,000 pounds in the first half of the year. That merely proves that some oldsters stay with their old habits, or perhaps we should put it that there are still a lot of areas in the United States with rural ideas.

"Even scouring powder comes in to the syndet picture since scrap grades of the granular material are incorporated in them in place of soap and, therefore, they now foam dependably in hard water, something which they often did not do not too many years ago.

In speaking of the future, Dr. Snell had this to say: "We have seen that the built syndets have but few new fields to conquer. Therefore, the radical increase in volume to consumers which occurred in the first half of this year will probably not continue. It may even slacken off so that my 1956 figure as double the first half will be too high; that is what I would expect. Next year or some year after that, the syndet bars will take over the toilet soap field. They are really good. Someone will find out how to manufacture them at a strictly competitive cost. Other large potential uses for the related surfactants exist in such widely diversified areas as promotion of penetration of water into the soil, increased recovery of

petroleum from oil sands, addition to cattle and poultry feed, and addition to fertilizers. Except for the first, each is in use on a greater or less scale today.

"Much research has been going on in the use of tallow for manufacture of syndets. Progressively increasing quantities of tallow have been converted to fatty alcohols and sulfated to give the active agent. A great deal of other research is under way and considerable of it has been published. I should be much too modest if I did not mention in passing the fond hope that esters made from sucrose, worth basically about three cents a pound and inedible tallow selling for around seven cents a pound might go into commercial syndets. At the present moment two American firms, as well as a number of firms abroad, have licenses to exploit such a process as owned by the Sugar Research Foundation. Detergentwise they are about as efficient as the alkylaryl sulfonate. One American licensee will be on the market in early 1957.

"One of the early hopes in the use of syndets was that they would be less irritating to the human skin than soap. This was based on the fallacy that the irritation due to soap was due to the degree of alkalinity. The subject is too large to go into here, but in abbreviated form, the practical result is that either one defats the skin to about the same degree, and therefore the problem of hypersensitive reactions to cleaning products have not been solved by the introduction of syndets to the public."

## Detergent Market

**I**N a talk entitled, "The Public Be Pleased", J. G. Pleasants, vice-president in charge of research and development for Procter & Gamble Co., Cincinnati, made these points as being of importance in operating "a consumer goods business in the soap and detergent industry": "It is obviously necessary that the business... must have in its organization people who specialize in being knowledgeable in the following areas among others:

- "Knowing people, the people who make up our mass market, and being able to communicate accurately with them about their feelings concerning the kinds of products they need.

- "Knowing how to create and produce the products to the desired pattern.

- "Knowing how to tell the people of our mass market convincingly about the products we have made; and

- "Knowing how to get the products to the outlets which buy them from us, in other words, knowing distribution.

"The above performance of any one of the above specialties is sufficiently demanding so that it could deserve to be the theme of a week of meetings...

"With an organization including groups with these abilities at work, the next major consideration is to emphasize the formation of the habit of decision and action on the basis of facts, rather than opinion or judgment. The only difference between operating on the relatively sound ground of ascertained facts versus snapshooting on the basis of judgment is some time and effort. And our experiences have revealed the will of our public as so im-

patient that the taking of time to try to get facts appeared too costly.

"Of equal importance is the habit of work and thought that recognizes the inherent team nature of the entire effort, including all the specialties which I just mentioned. Without the capable performance of any one of them, the overall enterprise is crippled. But given adequate performance of all the phases, and given successful results, it is absolutely impossible to designate any one group as more important in that result than any other. A consumer goods business must have consumer communication and technical strength and marketing and distribution strength to succeed; and yet it is not dominantly any one of the four.

"It is very healthy in preserving the proper modesty throughout all segments of the organization to be always mindful of the fact that the real boss of the business is not in the organization at all, but is its customers. All of us specialists, in whatever field, have the common responsibility of trying to please those consumers. Recognition of that responsibility is pretty effective in substituting earnest cooperation for jealous competition. Incidentally, this consciousness of teamwork to which I refer is no good if it requires conscious enforcement from some source of authority all the time. It must permeate the entire organization, and operate spontaneously at all levels.

"A corollary to this habit of teamwork or perhaps a result of it, is the need for major company decisions to be made on the basis of a balanced weighing of the considerations principally affecting the different specialist segments of the organization. In a properly run consumer goods organization, the interests of the different parts are usually self-supporting, rarely conflicting, if the facts are read right.

"Another corollary to the habit of teamwork is the essentiality of discouraging the concept of the 'one-man genius.' Nothing could be more upsetting to a consumer goods industry and its necessary style of operation than this character. Even if he's good himself he's no good for the organization, and whenever we get one we'll give him away.

"... The soap and detergent business... is never finally 'its own boss' because it is subject to a great natural

Members of Panel 2: Peter T. Vitale, Colgate-Palmolive Co.; J. A. Quinn, Theobald Industries; Carl Pacifico, American Alcolac

Corp., chairman; Dr. Daniel H. Terry, Bon Ami Co., and Lester D. Berger, Jr., fine chemicals division, Carbide and Carbon Chemicals.







Members of Panel 3: J. L. Perlman, B. T. Babbitt, Inc.; J. D. Hetchler, Archer-Daniels-Midland Co.; P. Trix, Wyandotte Chemicals Corp.; and Dr. A. B. Steele, Carbide and Carbon Chemicals Company.

force—the opinion of its consumers, who make up the entire public. Operation in this kind of business must be progressive, resourceful but not opinionated, always open-minded and sensitive. The cornerstone of success in such a business is the ability to carry on a never-ending, flexible, intelligent courtship of the public.

"Perhaps there is even a simpler way to say what it takes to be successful in a consumer goods business like soaps and detergents. It is for all members of all parts of the organization to spend practically all of their working lives in the business under the tutelage and example of men who, from the chairman of the board and the president on down, have spent all *their* working lives in the business. When you have done that, you know something about it. But because the public's mind is ever-changing, you still keep on learning day after day how better to live up to the slogan, 'the public be pleased'."

### Petrochemicals' Role

**T**HE role of the petrochemical industry in the growth of synthetic detergents was described in a paper presented by James C. Kirk of Continental Oil Co., Ponca City, Okla. The paper co-authored by E. R. Baker, described the petroleum industry's participation in this transition, tracing the growth from the introduction of the principal detergent ingredient in 1946 to date. The extreme care that is exercised by petrochemical producers to maintain high quality in their products, and the extensive test work that is carried out by them in developing new products were described by Mr. Kirk. His talk was mainly confined to the alkyl benzene types of intermediates and in particular those derived from propylene polymers.

The average composition of

heavy-duty, dried detergents was discussed by Mr. Kirk. He also discussed the formulation of liquid detergents.

### Panel Discussions

**D**R. W. E. Elwell, eastern manager of the product development department of Oronite Chemical Co., New York, was chairman of panel No. 1 ("Market Development of Large Volume Chemicals in the Soap and Detergent Industry"). Panel members included:

Dr. V. J. Blinoff, president, American Alcolac Corp., Baltimore; Dr. Chapin E. Stevens, manager of sales promotion and development, Antara Chemical Division, General Aniline & Film Corp., New York; Jay C. Harris, assistant director of research for consumer products division, Monsanto Chemical Co., St. Louis; J. R. Macon, manager of market research and product development, chemical products sales division, Atlantic Refining Co., Philadelphia.

Mr. Macon traced the growth of the alkylaryl sulfates and indicated that synthetic detergents in 1956 would represent about 68 percent of all soaps and detergents produced, or approximately 2.9 billion pounds. By 1965 the percentage of detergents is expected to increase to 77 percent or 3.8 billion pounds. In 1956, approximately 53 percent of the surface active agents used in detergents were alkyl aryl sulfonates. This percentage should rise to 50 percent by 1965, Mr. Macon indicated.

Some price increases in the price of petroleum based surfactants are foreseen by the petroleum industry, according to Mr. Macon,

as the result of rising costs of benzene, propylene and alkane, because of increasing octane demands. The price of dodecylbenzene will not rise according to present indications.

Mr. Blinoff said that alkyl sulfates—the original detergents—never have reached big volume. They have good properties which can be modified by ethoxylating alcohol and then sulfating. They are of interest in liquid detergents because they have the characteristics of solubilizing filters. Cost has been the big handicap to alkyl sulfates, according to Mr. Blinoff. He indicated that the chemical industry might assume a large role in fatty alcohol synthesis.

Mr. Stevens listed the nonionics in the order of decreasing importance. Tall oil type nonionics now are the biggest category used. A new development, sulfation of nonionics, places them in direct competition with the alkyl aryls, Mr. Stevens reported. As for nonionic growth prospects, these are still prospects, according to Mr. Stevens. "We don't have a firm fix on where the nonionics are going", he said, pointing out that their current usage is low.

Tripolyphosphate and tetrasodium pyrophosphates are the work horses of the detergent builders, Jay Harris declared. They represent 75 to 90 percent of the complex phosphates used in detergent compositions, he stated. However, their growth curve is leveling off. New developments along the lines of types of complex phosphates that can be used in heavy duty liquid are being studied. If potassium salts are used to any extent in heavy duty liquids they will go into large volume. The sodium salts can be made to work in heavy duty liquids, Mr. Harris stated.

Panel 2 discussed "Specialty Chemical Market Development in the Soap and Detergent Industry". Carl Pacifico, vice-president of American Alcolac Corp., Baltimore, was chairman and summarized the

(Turn to Page 241)



# Sugar Based Detergents

By Lloyd Osipow, Foster Dee Snell,  
Dorothea Marra, and William C. York\*

Foster D. Snell, Inc., New York

**N**ONIONIC surface-active agents are becoming increasingly important, but have been held back commercially by their relatively high price. A new nonionic, so low in potential cost that it should prove competitive with sodium dodecylbenzene sulfonate, is made from sugar and tallow fatty acids. A method of preparation of the monoester is briefly indicated. Also evaluation in terms of the surface-active and detergent properties of individual monoesters are reported.

Many difficulties arise in working out a method for the manufacture of a new compound whose properties are necessarily unknown. For example, what is a good solvent for the reactants and the final compound? Some of the difficulties involved in the preparation of sugar esters are that sucrose and fats or fatty acids have quite unlike solubilities. Sucrose decomposes partially when heated, or in an acid medium. All of the eight hydroxyl groups in sucrose are reactive. Theoretically 255 different sucrose esters can be formed.

A method reported for preparation of sucrose monoesters of fatty acids is by use of one mole of the methyl ester of the fatty acid with three moles of sucrose in the presence of 0.1 mole of potassium carbonate as catalyst. Dimethylsulfoxide or dimethylformamide may be used as solvent. The reac-

tion is carried out at 90-95° C. under 80-100 mm. of mercury pressure. A six-plate fractionating column is suitable for stripping the methanol from the system. Part of the solvent is distilled off after nine to twelve hours and the residue dried under vacuum.

## Solubility

**T**HE individual esters—sucrose laurate, myristate, palmitate, oleate, and stearate—are readily soluble in warm water, ethanol, methanol, and acetone. In hot water, sucrose palmitate and stearate formed viscous solutions which gelled at room temperature. The solution of sucrose laurate even at 30 percent concentration was low in viscosity.

## Surface, Interfacial Tension

**S**URFACE and interfacial tension measurements of the esters are shown in Table 1 and are compared with those of two other nonionics and that of sodium dodecyl-

benzene sulfonate. In these properties the sucrose esters are much more surface-active than the two commercial nonionics, but in general not quite as surface-active as dodecylbenzene sulfonate.

## Wetting Power

**I**NDIVIDUAL sucrose esters vary in wetting properties and, in general, are only fair wetting agents, as shown in Table 2.

## Detergency on Cotton

**T**HE sucrose esters were built with approximately the same ingredients as those found in the common heavy-duty detergents except that sodium carboxymethyl cellulose was omitted. This was to enhance differences in anti-greying action shown by the surfactants themselves. The test conditions for soil removal follow. Soil redeposition was tested in the same manner, except that in place of soiled cotton swatches, clean desized cotton swatches were employed and

Table 1. Surface and interfacial tension values of aqueous surfactant solutions at room temperature.

	Surface Tension Dynes/cm.				Interfacial Tension Against Nujol Dynes/cm.			
	1.0%	0.2%	0.1%	0.05%	1.0%	0.2%	0.1%	0.05%
Sucrose laurate .....	33.4	33.4	33.7	35.6	7.6	7.1	7.9	8.4
Sucrose myristate .....	33.1	33.1	34.8	34.8	7.3	6.3	7.0	7.4
Sucrose palmitate .....	33.7	33.7	33.7	35.0	6.3	5.9	6.2	6.2
Sucrose oleate .....	31.8	30.8	31.5	32.7	5.4	5.0	5.0	6.2
Sucrose stearate .....	33.5	33.1	34.0	33.7	6.2	6.6	7.7	7.2
Tall oil-polyoxyethylene condensate .....	40.4	41.0	41.0	42.0	6.7	7.0	7.2	7.7
Polycxyethylene- polyoxypropylene condensate .....	43.0	47.0	48.0	48.0	13.0	15.2	16.1	16.5
Sodium dodecylbenzene sulfonate .....	31.0	30.9	29.4	29.3	2.3	2.3	2.0	2.6

\*Condensed from two papers on "Methods of Preparation" and "Surface Activity of Monoesters" published in *Ind. Eng. Chem.*, September, 1956.

0.025 percent carbon black soil was added to the wash water.

Amount of solution per jar	100 ml.
Mechanical washing assistants	8 rubber balls, $\frac{3}{8}$ " diameter
Temperature	60°C.
Speed of rotation of jars	40 RPM
Time for washing	15 minutes
Rinsing procedure	Rotate two minutes with 150 ml. water of same hardness as wash water
Fabrics per jar	Two swatches of FDS soiled cotton 3 x 2 inches
Reflectance reading	By Hunter Multipurpose Reflectometer set to read 100 on magnesia block

The material referred to as FDS soiled cotton is a commercial fabric soiled with carbon black, coconut oil, coconut oil fatty acid, and mineral oil based in principal on the study of soil on garments.(1)

In Table 3 the efficacy of soil removal and prevention of soil redeposition is shown for the various esters after building, in comparison with that of dodecylbenzene sulfonate, a commercial nonionic, and water. The results indicate that the detergents are all roughly equivalent in soil removal in soft water, but in hard water the commercial nonionic is poorer than the rest. For prevention of soil deposition in soft water, the commercial nonionic is superior, followed by sucrose stearate; in hard water, the differences are not statistically significant.

**Table 2. Draves Test at 0.2 percent detergent concentration, and 50° C.**

Surfactant	Sinking Time in Seconds of a 5-Gram Unscoured Cotton Skein Using a 3-Gram Hook	
	2-Grain Water	15-Grain Water
Sucrose laurate .....	33	37
Sucrose myristate ....	52	46
Sucrose palmitate ....	41	48
Sucrose oleate .....	25	48
Sucrose stearate .....	97	112
Sodium dodecylbenzene sulfonate .....	1	1
Tall oil-polyoxyethylene condensate .....	62	33

Soil removal and redeposition studies of mixtures of sucrose palmitate and sodium dodecylbenzene sulfonate in ratios varying from 3:1 to 1:3 showed that the efficiency of soil removal was practically the same as that of sodium dodecylbenzene sulfonate alone. Prevention of soil redeposition was somewhat better with the mixtures than with sodium dodecylbenzene sulfonate alone.

#### Foaming Power

THE foaming properties of the built sugar-ester detergents were measured by the method of Ross and Miles(2) shown in Table 4. The results show that the sugar esters are much lower in foaming power than sodium dodecylbenzene sulfonate in both soft and hard water. Sucrose palmitate and stearate are very poor foamers. This difference

in foaming power between the nonionic and anionic is to be expected, as a similar relationship has been shown for many nonionics. It is illustrated in the table by the values for the commercial nonionic, which has about the same low foaming power as sucrose palmitate and stearate. Nonionics in use where high foaming is desirable have special foaming agents added.

#### Emulsifying Power

IN practical use the sugar esters are excellent emulsifying agents. A substantial number of cosmetic and pharmaceutical lotions, creams and ointments have been prepared which have remained stable after many months of aging. In general, emulsions containing sucrose esters are rendered more stable by combining the sucrose ester with a more lyophilic emulsifier, such as one of the "Spans" or glycerol monostearate. This behavior of sucrose esters as emulsifiers is characteristic of synthetic surfactants which are good detergents in aqueous systems.

Emulsions were prepared containing 10 volume percent of oil in water using 1.0 percent total of emulsifying agent. Where glycerol monostearate was used, it was first dissolved or dispersed in the oil. A five percent solution of the water-soluble emulsifier was added slowly to the oil phase with mechanical agitation until phase inversion.

**Table 3. Cotton launderometer test results at 60° C. Results are expressed as brightness units regained, based on magnesium oxide = 100. Values are the averages of four replicates.**

Built Detergent					Pcmts by Weight			
Active Detergent .....					20			
Sodium Tripolyphosphate .....					40			
Tetrasodium Pyrophosphate .....					10			
Sodium Metasilicate (Pentahydrate).....					10			
Sodium Sulfate .....					10			
Sodium Bisulfate .....					10			
pH of 1.0% Solution.....					9.8			
					Soil Redeposition on Clean Cloth with 0.025% Added Carbon Black			
Surfactant	Soil Removal							
	2-Grain Water		15-Grain Water		2-Grain Water		15-Grain Water	
	0.35%	0.2%	0.35%	0.2%	0.35%	0.2%	0.35%	0.2%
Sucrose laurate .....	11.1	12.0	12.3	9.6	—30.1	—28.6	—31.0	—33.3
Sucrose myristate .....	11.3	12.3	13.8	14.9	—29.1	—27.2	—38.9	—31.0
Sucrose palmitate .....	12.9	13.4	15.5	15.3	—26.1	—25.5	—32.7	—31.6
Sucrose oleate .....	12.5	12.8	16.3	12.1	—27.1	—26.0	—35.4	—31.6
Sucrose stearate .....	12.1	12.9	14.1	11.1	—28.1	—21.6	—29.0	—29.3
Sodium dodecylbenzene sulfonate.....	12.9	13.3	14.2	10.5	—35.3	—28.3	—36.7	—31.8
Tall oil-polyoxyethylene condensate....	12.5	10.9	11.0	8.9	—12.9	—18.7	—15.0	—29.9
Water .....	3.0	2.9	4.0	3.1	—44.7	—44.3	—42.6	—40.8

**Table 4. Ross and Miles foam test results at 43° C., 0.2 percent heavy-duty detergent compositions.**

Surfactant	Foam Height in cm. after Indicated Time in Minutes							
	2-Grain Water				15-Grain Water			
	0 Min.	1 Min.	5 Min.	10 Min.	0 Min.	1 Min.	5 Min.	10 Min.
Sucrose laurate .....	13.0	12.5	12.0	12.0	9.5	9.0	8.5	2.5
Sucrose myristate .....	14.0	13.5	13.0	12.0	8.0	7.0	7.0	6.0
Sucrose palmitate .....	1.5	1.0	1.0	1.0	0.5	...	...	...
Sucrose oleate .....	8.0	8.0	7.5	7.0	2.0	2.0	1.5	1.5
Sucrose stearate .....	1.0	0.5	...	...	0.5	...	...	...
Sodium dodecylbenzene sulfonate .....	20.0	18.0	18.0	18.0	22.0	19.5	19.0	19.0
Tall oil-polyoxyethylene condensate .....	2.0	2.0	1.5	1.5	2.5	2.0	2.0	2.0

The remainder of the surfactant solution was then added rapidly, followed by the required amount of water. The 100 ml. of each emulsion was transferred to a Nessler tube and observed for creaming and coalescence. The phases were combined and the emulsions were aged at room temperature.

The results given in Table 5 show that sucrose palmitate when used alone is a poor emulsifier under the conditions of test. Combined with 25 percent of glycerol monostearate, the combination provides good emulsification of silicone oil. Combined with 75 percent of glycerol monostearate, the combination provides good emulsification of mineral oil. Sodium dodecylbenzene sulfonate and the commercial nonionic are poor emulsifiers when used alone. Under the test conditions glycerol monostearate alone gives about the same degree of emulsification as sucrose palmitate alone.

#### Sucrose Ester Stability

THE stability of sucrose esters was studied under varying conditions. To study stability at elevated temperatures, detergent solutions containing sucrose palmitate, built for heavy-duty as shown in Table 3, were aged at 60° C. for 30 minutes at 0.2 percent detergent concentration. Comparison in terms of washing tests in the Launderometer of the aged samples at their normal pH of 9.6, with similar but freshly made detergent solutions, in 15-grain water, indicated only a very slight decrease in the detergent action of the aged

samples due to hydrolysis. Aqueous slurries at a 50 percent concentration of built detergent and pH 12.0 were aged for two hours at 60° C. and then diluted with 15-grain water to 0.2 percent concentration. The washing efficiency of the samples aged at pH 12 was as good as that of fresh detergent solutions. The overall results showed that solutions of the sucrose esters were not reduced in detergent value under these test conditions.

Another method of studying the effect of temperature was with the use of three solutions, each consisting of 5.0 grams of sucrose stearate and 10.0 grams of sodium triphosphate dissolved in one liter of distilled water. The pH of the solutions was 9.5. The solutions were maintained at 60° C. for 0 minutes, one hour, and four hours. The extent of hydrolysis was determined by dissolving 100 grams of sodium chloride in each of the one-liter solutions and extracting each of the solutions with three 100 ml. portions of n-butanol. The water solutions were then concentrated by boiling to 150 ml. solution volumes,

filtered to remove sodium chloride and the precipitate washed. Sucrose was determined on the water solution and sucrose stearate on the n-butanol layer, both by polarimetry. Corrected for a trace of free sugar in the control after treatment, after one and four hours at 60° C., 8.9 and 14.5 percent of the sucrose stearate had hydrolyzed respectively. This shows a moderate degree of hydrolysis.

Stability to acid was determined using 0.1 percent concentrations of sucrose stearate in 0.1 N-hydrochloric acid. Thirty minutes at the boil resulted in the formation of 6.9 percent of free stearic acid, based on the amount of sugar ester. Two hours at 37° C. resulted in the formation of 2.5 percent of free stearic acid, based on the amount of sugar ester. This showed the ester to be partially stable to acid, the degree of hydrolysis being small.

#### Toxicity

SUGAR esters of long-chain fatty acids would hydrolyze during the digestive process to form normal food components, namely, sugar and fatty acids. They can, therefore, be expected to be both nontoxic and nutritional. Preliminary toxicity studies were made with rats. The feeding of sucrose stearate to rats by stomach tube indicates that single dosages of 5.0 grams per kilogram of body weight are without adverse effect. Six rats were maintained on a diet containing 10 percent of sucrose monostearate for one month without show-

(Turn to Page 81)

**Table 5. Stability of oil-in-water emulsions.**

Sucrose palmitate, %	Glycerol monostearate, %	10% Silicone oil in water		10% Mineral oil in water	
		2 hrs.	3 days	2 hrs.	3 days
1.0	0.0	4	4	3	4
0.75	0.25	1	2	3	4
0.50	0.50	1	2	3	4
0.25	0.75	3	3	1	1
0.0	1.0	3	4	3	4
1.0% Sodium dodecylbenzene sulfonate .....		4	4	4	4
1.0% Tall oil-polyoxyethylene condensate .....		4	4	4	4

Code: 1—Complete emulsification, no creaming. 2—Creaming, no coalescence. 3—Partial coalescence. 4—Emulsion completely broken.

# New Thickener for Glycerine

**Improved viscosity through the use of "Carbopol 934" suggests new applications for glycerine and offers improvement of many present glycerine applications**

**By Louis Cohen**

B. F. Goodrich Chemical Co.  
Avon Lake (O.) Experimental Station

**D**UE to the extreme clarity, lubricity, smoothness, and very high viscosities obtainable with "Carbopol 934" thickened glycerine, there are a great number of fields of application which should be considered. The following material covers only a small segment of the potential applications existent for this system. A thorough coverage going into detail would be far beyond the scope of this paper.

Some of the material reported herein was done in the laboratory in an exploratory manner; whereas, most of the reference material to applications was from the authoritative book on the subject — "Glycerine, Its Industrial and Commercial Applications," by Leffingwell and Lesser.

*Lubricants:* Glycerine thickened with Carbopol has the requisite body and oiliness required to combat friction. There is a wide temperature range between the freezing and boiling point.

From the relationship of viscosity vs. temperature for a Carbopol-glycerine system (as shown earlier in Fig. 5), it would appear that for a lower temperature lubrication application, the addition of water to glycerine thickened with "Carbopol 934" would be desirable for the following reasons:

1. The freezing point would be depressed to a very low value. A eutectic mixture of 67 percent glycerine and 33 percent water has a freezing point of  $-46.5^{\circ}\text{C}$ .
2. The addition of water to the

## Part II

Carbopol thickened glycerine reduces the sensitivity of viscosity to temperature. (With increasing water content the curve of viscosity vs. temperature shifts from the very steep slope characteristic of Carbopol-glycerine to the nearly horizontal curve for Carbopol in water.) A non linear relationship exists between the amount of water added to Carbopol thickened glycerine and the resultant shift in viscosity-temperature curve toward the horizontal water - Carbopol curve. That is, a small amount of water addition shifts the curve considerably to a less severe temperature-viscosity relationship.

For lubricants used near room temperature and those which are exposed to periodic heat build-ups the desirability of water addition may be lessened due to the evaporation of water. However, the humectant properties of glycerine would do much to reduce the water loss, in fact, possibly to a balancing degree as to favor the use of some water for the viscosity-temperature stabilization which would be imparted.

The high thermal conductivity of glycerine and blends with water can be used to advantage in lubrication systems since heat transfer is a fairly important requirement of some lubrication uses.

There is, of course, much

room for extensive study in the relationships between glycerine, water, and "Carbopol 934" combinations for those who are seriously interested. An interesting study would be the effect of various amounts of water on the coefficient of static friction of glycerine. Values for glycerine alone are reported as being 0.20 at  $20^{\circ}\text{C}$ . and 0.25 at  $100^{\circ}\text{C}$ ., as against 0.15 at  $20^{\circ}\text{C}$ . and 0.20 at  $100^{\circ}\text{C}$ . for solvent refined oil. (6) A valuable study would be the incorporation of non-ionic, non-foaming wetting agents to further decrease the surface tension of glycerine-water-Carbopol systems. (Glycerine alone has a surface tension of 47.9 dynes/cm at  $20^{\circ}\text{C}$ . (7) .)

Types of lubricants which are of special interest are:

### 1. Non-toxic lubricants

In general, any lubricant where water miscibility is advantageous in allowing the lubricant to be easily washed off, or where contamination would present a toxicity problem.

- a) Food processing equipment.
- b) Cosmetic and pharmaceutical equipment.
- c) Diagnostic and surgical instruments.

### 2. Non-hydrocarbon lubricants

Wherever thickened lubricants are used in contact with organic solvents and vapors that remove ordinary hydrocarbon based lubricants.

- a) Gasoline, propane, butane pumps.



- b) Industrial solvent handling equipment.
- c) Laboratory apparatus, ground glass joints.

### 3. Rubber lubricants

Due to the beneficial effects of glycerine to rubber, "Carbopol 934" thickened glycerine can be employed wherever a paste form would be desirable.

- a) Auto lubricants for rubber shackles.
- b) Rubber mold lubricants.
- c) Glycerine-graphite rubber bearing lubricant. (8)

### 4. Fire resistant lubricants

A glycerine-water-Carbopol lubricant is non-flammable and should therefore be applicable where there is susceptibility to fire.

Glycerine has been found to be one of the few safe materials for lubrication where high temperature and pressure would cause explosions with the usual type lubricants. (9) An example is the lubrication of apparatus and equipment coming in contact with compressed oxygen.

### 5. Extreme pressure lubricants.

"Carbopol 934" may be a valuable adjunct in the viscosity control of suspensions such as molybdenum disulfide in glycerine. Suspensions of this nature are finding use in gear lubrication as a replacement for hydrocarbon oils. (10)

### 6. Gasket pastes.

For air conditioning and refrigeration equipment.

### 7. Metal drawing lubricants.

"Carbopol 934" thickened glycerine in combination with d-mannitol, which was reported to increase the greasiness of glycerine-dextrin lubricants (11), should produce a good grease type lubricant insoluble in organic solvents and of interest in laboratory work. A suggested formula, which is a modification of a formulation of Melocke & Frederick is

Glycerine .....	100
Carbopol 934 .....	1-2
d-mannitol .....	14

A thickened glycerine lubricant is described as being prepared by mixing a sodium alginate mu-

cilage with glycerine and then boiling off most of the water. (12) This results in a concentration of over 15 percent sodium alginate in glycerine. Due to the very efficient thickening ability of "Carbopol 934" in glycerine, an equivalent lubricant would be expected with one or two percent "Carbopol 934" in glycerine. The water can be eliminated as a means of dissolving the thickener.

**Cosmetics:** Glycerine is employed extensively in cosmetics for its humectant, emollient, vehicle, penetrating, and softening qualities. The list of types of formulations reveal the following areas in which glycerine might be used in conjunction with "Carbopol 934" to advantage.

1. Glycerine creams and gels
2. Hair pomades
3. Hand creams and lotions
4. Lip jellies
5. Skin protectives
6. "Solidified" glycerine
7. Dentifrices

The very clear smooth gel of "Carbopol 934" in glycerine lends itself to customer appeal, which is so important to the field of cosmetics.

The writer has used a 0.5 percent solution of "Carbopol 934" in glycerine as a hair dressing. It is decidedly beneficial for dry hair and increases manageability.

The same simple base of 1.0 percent "Carbopol 934" in glycerine with the addition of powdered or flaked aluminum makes a good

flash cream when applied to the skin. This may be used to reflect radiation, such as heat, and is easily washed off with water.

A vanishing cream containing eight percent glycerine and 1.3 percent "Carbopol 934" is recommended as being very stable by Nobles. (13) "Carbopol 934" has already been demonstrated to be a valuable suspending agent and emulsion stabilizer in water based cosmetics and it would be expected to apply to mixtures of water and glycerine.

The toothpastes shown below based on "Carbopol 934" thickened glycerine have been recently prepared in our laboratory in an exploratory vein and appear visually comparable to toothpastes presently on the market. They have not as yet been thoroughly tested and therefore, cannot be recommended for use as such.

It will be noted that with "Carbopol 934" and glycerine it is possible to exclude water from the formulation entirely, producing the optimum in non drying properties and gloss. (As in #2.) Formulation #1 is more conventional in nature. The experienced toothpaste compounder will no doubt wish to try variations in each of the ingredients.

Several principles have been noticed in working with "Carbopol 934" in glycerine as a toothpaste vehicle:

**Toothpastes based on "Carbopol 934" thickened glycerine**

Ingredients	#1	#2
6% C-934 in water, pH 7.....	25	—
1% C-934 in glycerine, pH 7.....	—	50
Glycerine .....	25	—
Dicalcium phosphate .....	45	57
Duponol C .....	2	2
Mint flavor .....	1	1
% Polishing agent .....	46	52
% Glycerine .....	25	45
% Water .....	24	0
% Duponol C .....	2.2	1.8
% Carbopol 934 .....	1.5	0.5
Appearance .....	glossy, good	glossy, good
Drying .....	slight	non-drying
Extrusion .....	easy	easy
Consistency .....	does not sink into bristles of brush	does not sink into bristles of brush

**Table 2. Neutralization — pH versus viscosity one percent "Carbopol 934" in glycerine neutralized with NaOH (50 percent solution)**

pH	Brookfield rheology (Model R.V.F.) Viscosity cps. Spindle speed (RPM)				Corrected viscosity (V3)	Yield value dynes/cm.
	2	4	10	20		
3.7	4,280	4,150	3,800	3,325	4,020	5.2
4.2	57,000	43,750	30,100	22,850	20,500	530
5.3	220,000	150,000	92,000	64,000	80,000	2,800
6.5	390,000	260,000	152,800	102,400	130,000	5,200
7.35	430,000	290,000	168,000	112,000	150,000	5,600
9.7	—	—	—	93,000	—	—
10.2	106,000	75,000	50,000	36,800	44,000	1,240
Glycerine alone	800	800	800	800	800	0
1% C-934 in water pH 7.1 with NaOH	237,000	138,750	69,000	41,000	40,000	3,950

1. The amount of polishing agent which can be added successfully

**Table 3. Viscosity Versus Concentration**

- A. "Carbopol 934" (Lot No. 11) in glycerine, neutralized to pH 7.3 (NaOH)
- B. "Carbopol 934" (Lot No. 11) in water, neutralized to pH 7.0 (NaOH)

A. Glycerine % Carbopol 934	Brookfield R. V. F. Viscosity (20 r.p.m.)	
	Spindle	Centipoises
0.0	3	800
0.1	3	1,910
0.2	4	5,000
0.3	5	11,100
0.4	6	20,500
0.5	6	30,300
0.6	7	48,000
0.7	7	61,000
0.8	7	76,000
0.9	7	90,400
1.0	7	106,000

**B. Water**

0.0	1	1
0.1	1	17.5
0.2	1	123
0.3	2	1,030
0.4	4	3,650
0.5	4	7,020
0.6	5	11,500
0.7	5	16,000
0.8	6	22,900
0.9	6	27,500
1.0	6	34,000

is greater with increased proportions of glycerine contained in the vehicle.

2. The amount of "Carbopol 934" required is increased by reducing the amount of polishing agent or the proportion of glycerine in the vehicle.
3. The yield value imparted by thickening with "Carbopol 934" appears to be very desirable in reducing the "flattening out" tendency of a filament of extruded toothpaste.

*Miscellaneous:* 1. *Cleaners, Polishes, Grinding Pastes.* Fine metal polishing work often employs simple suspensions of abrasives in glycerine. Glycerine based polishes and grinding pastes could be made in paste form with "Carbopol 934."

**Table 4. Viscosity of "Carbopol 934" in blends of glycerine and water. Blends neutralized to pH 7.0 with sodium hydroxide. Concentration of "Carbopol 934" is one percent in every case.**

% of 1% "Carbopol 934" in Glycerine	% of 1% "Carbopol 934" in Water pH	Brookfield Viscosity cp. (20 r.p.m.)
100%	0%	7.0
75%	25%	7.0
50%	50%	7.0
0%	100%	7.0
		116,400
		58,000
		39,000
		31,350

**Table 5. Viscosity versus temperature**

1% "Carbopol 934" in Glycerine Neutralized to pH 7.3 with NaOH

Temperature °C.	Brookfield rheology (Model R.V.F.) Viscosity cps. Spindle speed (RPM)				viscosity (V3) Corrected	dynes/cm <sup>2</sup> Yield value
	2	4	10	20		
0°	1,876,000	—	over scale	—	—	Too high
9°	1,276,000	843,000	—	over scale	410,000	17,320
14°	756,000	513,000	309,600	—	270,000	9,720
20°	710,000	480,000	286,400	196,000	250,000	9,200
27°	470,000	312,000	183,200	123,000	154,000	6,320
37.7°	292,000	200,000	118,000	79,400	108,000	3,680
71°	144,000	91,000	51,600	34,600	38,000	2,120
93°	80,000	52,000	28,000	18,200	24,000	1,120

**Appendix**

The data on this page represent some of the material from which the curves in Part I were drawn.

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# Soap Perfuming— Why and How

By F. V. Wells\*

## PART II

### ALDEHYDES & ACETALS.

**W**HEN we come to the aldehydes, I find myself accepting the implications of Pickthall's viscosity figures more readily than does the author himself. He writes: "The aldehydes did not fit in well with our theories. In the main, they gave very small increases in viscosity and poor odor effects in soap. The latter effects are not due to changes in the aldehyde structure in our opinion. Phenylacetaldehyde, citral, decyl aldehyde and amyl cinnamic aldehyde all gave low viscosity results and weak odors in soap. There was one notable exception and that was *alpha* methyl *para* iso-propyl phenyl propyl aldehyde (cyclamen aldehyde)."

Many aldehydes — aromatic, terpene and aliphatic — are widely used in soap perfumery, despite their reactivity and relative insta-

bility. As is shown in Table 2, lauric aldehyde, in particular, was found to give very fine and lasting effects in a good quality milled toilet soap base. Here it was not "protected" by the presence of any of the miscellaneous chemicals and resins often suggested for this pur-

pose. In all cases the various aldehydes were found of vastly more interest for the purpose than the corresponding acetals, if indeed one can consider any acetal to "correspond" at all closely with its parent aldehyde as far as odor is concerned.

**Table 2. Behavior of Representative Aldehydes (0.5%) in Milled Toilet Soap**

Perfumery Chemical	Odor after:		Discoloration	Comments
	1 month	6 months		
Heptaldehyde	Fatty	Milder	None	Of little interest.
Nonyl aldehyde	Characteristic		None	Useful for top notes.
Lauric aldehyde	V. Good	V. Good	None	Extremely interesting. A beautiful, persistent aldehydic note.
Citral (98/100%)	Good lemony	Good but fades	Slight yellow	Wrapped sample fades less.
Heliotropin	Good heliotrope	Some fading	None	— ditto —
Hydroxycitronellal	Fair, normal odor in soap	Weak blurred	None	Loses strength and character but better wrapped.
Phenylacetaldehyde	Prone to de- terioration		Yellow	One sample exhibits rancidity.
Amyl cinnamic aldehyde	Good fatty jasmin	Good	Very slightly yellow	Excellent effect. Per- sistent.
Cyclamen aldehyde	Good lime-lily	Good	None	Wrapped sample bet- ter and fresher.

\* Editor, Soap, Perfumery & Cosmetics, London, and consultant perfumer.

The observations on lauric aldehyde of Erickson *et al* (8) are of interest. They state that this aldehyde "has a powerful, sweet, fatty-like odor which can be used as a base for violet, jasmin, muguet, lilac and other types of floral fragrances. It is widely used in soap compositions and to prolong the lasting effects in perfume blends." It is ideally suited also for use in French type aldehydic toilet and bath soap perfumes. As Erickson and his colleagues add: "It is now possible to prepare fatty aldehydes which are completely stable both against polymerization and oxidation. Experiment has proven these to be superior in stability and odor value. When incorporated in perfume formulations in soap they exhibit outstanding color and odor stability. Now that these versatile aromatic compounds can be supplied in completely stable condition, it is to be hoped that they will find even wider application in the field of perfumery."

As will be seen in Table 2, one of my soap samples containing phenylacetaldehyde revealed indisputable signs of rancidity. I have been unable to produce a similar effect with check samples, but it is worth noting that some aldehydes, prone to decomposition, have the tendency to promote rancidity and should, therefore, be avoided in compounding perfumes for soap. (9)

For further notes on the aldehydes, readers may refer to my previously published articles (1) and to the usual texts.

My personal experience with the acetals in soaps continues to be rather disappointing. They start off initially by having weaker odors and different odors from the aldehydes from which they are derived. They are also, in general, more expensive. Of those referred to in Table 3, I would recommend experiments only with lauric aldehyde dimethyl acetal and citral diethyl acetal. The first has an odor rather close to that of lauric aldehyde itself, but milder, and is suitable for use in rose bouquets, tuberose,

**Table 3. Behavior of Some Acetals (0.5%) in Milled Toilet Soap**

Perfumery Chemical	Odor after:		Discoloration	Comments
	1 week	6 months		
Heptaldehyde dimethyl acetal	Sharp, fatty	Fades somewhat	None	Wrapped samples fade less.
Nonyl aldehyde diethyl acetal	Good aldehydic top-note	Good	None	Interesting.
Lauric aldehyde dimethyl acetal	Freshly "aldehydic"	Still fresh	None	Almost as good as the parent aldehyde.
Citral diethyl acetal	Fresh, developing an elemi-like note		Slight yellow	—
Heliotropin diethyl acetal	Muted heliotropin		None	—
Hydroxycitronellal dimethyl acetal	Fresh, nondescript	Develops a faint jasmin-pomade odor	None	Disappointing.
Phenylacetaldehyde glycerol acetal	Fresh, leafy floral	Fades	None	Not so useful as the dimethyl acetal.

violet, woody, Russian leather and aldehydic perfumes. The citral acetal is more like elemi than the parent aldehyde but could find use in Cologne blends, new mown hay types etc. It blends well with amyl cinnamic aldehyde.

**TERPENES.** Writes Pickthall: "In the main, the terpenes gave low viscosity increases and their performance in soap was quite good. It was noticeable that off-odors developed more quickly in non-colloidal bases than in soap."

At the author's suggestion, Pickthall tested the effect in soap of a sample of myrcene, provided by Messrs. Polak & Schwarz. This experiment gave a very curious but not unexpected result: whereas the strong and somewhat rank odor of the terpene rapidly fades on a testing slip, it stands up extraordinarily well in milled toilet soap. I have a wrapped sample that is now several months old. Containing 0.5 per cent myrcene, it has a slightly harsh but pleasing odor, very fresh and green, suggesting geranium leaves, with a shading of styrallyl acetate and nutmeg. I intend including from 10 to 20 per cent of myrcene in experimental formulae for rose-geranium, moss-rose and lavender soap perfumes, though it has many other possible applications.

The use of terpinolene, in association with such materials as steam-distilled pine, lemongrass and

citronella oils etc., is of course well known in the field of cheap household soap perfuming.

**CARBINOLS and CARBINYL ESTERS.** With the notable exception of "styrallyl" (phenyl methyl carbinyl) acetate, which is a most valuable and characteristic soap odorant, I have found most of the carbinols and carbinyl esters chiefly useful as mild "background" odors. This will be readily apparent from a glance or two at Table 4. Though I have referred to the odor of benzyl dimethyl carbinyl acetate as "fruity-cachou," there are some that consider it to resemble black currants, while others refer to its prune-like or even costus-like odor. At any rate, it remains fresh and curiously fruity in wrapped soaps kept for three months, and might well find application in jasmin and other floral bouquets. Benzyl isobutyl carbinol is particularly useful for its sweet, smooth background effect.

In general, the carbinols and their esters are best judged in finished formulae, as blending agents, rather than on their individual, isolated performances in soap.

**KETONES** revealed a wide range of variable viscosity behavior in Pickthall's tests. Ionone showed up well. In separate tests conducted by Pickthall and myself, methyl amyl ketone gave a stronger initial odor yield in soap than ethyl amyl ketone, but this position was re-



versed on standing. The ethyl ketone is, in fact, extremely useful in lavender, Cologne, fougere, and even muguet and other flower blends.

#### OTHER ODORANTS.

Ethers gave low viscosity readings and generally good odor effects in soap. The methyl eugenols and eugenyl acetate emerged as the most satisfactory members of the phenol group tested.

Of outstanding importance in soap perfumery are those basic supports of the entire structure—the resins and balsams. *Styrax* and *olibanum* are particularly good. *Peru balsam* is excellent, provided that a reliably standardized product is selected for the purpose. I have a personal liking for *galbanum*, normally used in proportions ranging from two to five per cent. *Elemi* also deserves to be more widely used.

Many of the special resinoids now on offer (even under the names of *ylang*, *sandalwood*, etc.) are more or less elaborate compounds. Some are good, however, and there is nothing to stop the soap perfumer from using them so long as he can be reasonably sure of the maintenance of quality in the future. It may be worth quoting *Jellinek* (6) on this subject although here, as in so many matters of opinion, I do not fully agree with him. "It is to be expected," he writes, "that eventually resinoids will completely replace essential oils in soap perfumes, with the

consequent improvement of quality and widening of the existing range." Certainly a sweeping generalization.

There is no doubt that certain soap perfumes currently fashionable in Europe today have an exceptionally high content of resins and "crystallines" such as *coumarin*, *heliotropin* and *benzophenone*. In many cases the perfume is of such a type and is used in such an amount that the odor still clings to the skin even five or six hours after washing.

*Fleurs des Vignes*, aldehydic, *Russian leather*, synthetic *ylang-paracresol*, and modified *fougere* blends of all kinds, are currently in vogue as toilet soap perfumes. A variant on the old-fashioned *Brown Windsor* remains popular in northern Europe. Names bear little relationship to odor. Thus "*Lotus Flower*" may be a *galbanum*-based fern compound or "*Camellia*" a modified *gardenia*.

#### Conclusions

AND so we come to the summing up. What happens to perfume in soap? How is it that a 50-year-old soap cake in my possession still possesses a strong, well-blended odor of *cassia*, *patchouli* and *vetiver*, when some soap perfumes scarcely last for a year? Some of the answers to this multi-faceted question have, I think, been given by *Sliras* and, more particularly, perhaps, by *Pickthall*. So far as the esters are concerned, they evidently

behave well in soap provided that (a) they have a good initial odor yield and (b) they are not readily saponified. *Sliras* suggests a simple preliminary test for the latter, involving the use of *N/2* aqueous *NaOH*.

On the face of it, *Pickthall's* series of experiments goes to show that close molecular association between perfume and soap is undesirable, in that it reduces the immediately apparent odor effect. Hydrogen-bonding, such as occurs with alcohols and phenols, especially weakens the characteristic odor of these products in soap. Ester and ether formation, by eliminating hydrogen-bonding, enhances the odor. The other type of association, characterized by dipole attraction, has a less marked reducing effect on the odor yield; hence the comparative strength of esters, ethers, ketones and (I would add) aldehydes. *Pickthall*, however, disagrees with me in regard to aldehydes—and further mentions the possible effects of (a) absorption of odorants between the methyl tail groups in the micelle; (b) solubility of odorants in water; and (c) diffusion of the odorant through the soap mass and thence into the atmosphere.

Two points may here call for clarification. Firstly, I must concede that *Pickthall's* reference to aldehydes relates to their relative strength of odor as compared with that given in non-colloidal bases. In the case of aldehydes we may also have the phenomenon of hydrogen bonding and other factors to consider. Further work on the physico-chemical approach to soap perfuming might well be directed towards a special study of the different behavior of various aldehydes in soap. Secondly—and this is more pertinent to the present article—*Pickthall* himself is well aware (10) that the whole argument about closeness of association may be turned round in favor of the more firmly integrated odorants, in that these latter may well be described as more firmly "fixed" in

**Table 4. Behavior of Some Carbinols and Carbinol Esters (0.5%) in Milled Toilet Soap**

Perfumery Chemical	Odor after:		Discoloration	Comments
	1 month	6 months		
Benzyl methyl ethyl carbinol	Lichenous sweet-pea	Faded but fresh	None	Useful background odor.
Benzyl isobutyl carbinol	Citrus-honeyed	ditto	None	— ditto —
Benzyl isopropyl carbinol	Fresh green floral	ditto	None	— ditto —
Benzyl dimethyl carbinyl acetate	Fruity-cachou	Fades somewhat	None	Interesting possibilities especially in wrapped soaps.
Benzyl dimethyl carbinol	Herbal fruity	ditto	None	Interesting background odor.
Benzyl phenyl carbinol	Melon-orris		None	Wrapped samples fade less.

the soap system. Such fixation may conceivably ensure a kind of latent persistence of odor in the soap, until such time as the conditions are altered by dilution in hot water or micellar rearrangement in suds formation.

Perhaps some emphasis should here be placed, moreover, on the fact that interactions between odorants, as well as between themselves and soap, must always be taken into account. The formation of Schiff bases and hemi-acetals is typical; but one might also mention the sensitivity of heliotropin to nitro-musks and the discoloration observed when patchouli oil containing mere traces of iron is "color developed" by amyl salicylate. Then, again, the micellar arrangement is apt to be disorganized during the lathering of soap in hot water, with consequent release of odorants in a pattern not exactly characteristic of their behavior in the dry soap cake.

On the constructive side (and this thought I leave with my readers as a guide to their own experiments) Pickthall observes:

"If our ideas on the relative strengths of associating molecules are sound, then it should be possible to force associating molecules from their position by the introduction of molecules which associate even more strongly. In this way the strength of odor of a given chemical in soap could be increased. Simple experiments in this direction show great promise."

So we see the threefold possibility of (a) ensuring immediately available odor in our soap cake; (b) enhancing this by the method of reducing the degree of association of certain molecules; and (c) using concurrently a more "latent" type of odorant that will persist longer in the soap and may pos-

sibly be made available during the washing process. I feel that the information given in this article should assist the individual soap perfumer to compose perfumes on these lines and thus check the various findings and theories in actual practice.

#### Acknowledgment

**T**HE author is grateful to Polak & Schwarz (England) Ltd., for supplying him with perfumed soap samples at his request and to their chief chemist, Jack Pickthall, F.R.I.C., for giving him the benefit of his views and suggestions.

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#### DCAT Committee

The Drug, Chemical & Allied Trades Section of the New York Board of Trade has named its committee chairmen and vice-chairmen for 1956-57, it was announced recently by J. David Hayden, chairman of DCAT. The new committee chairmen are as follows:

Auditing, Harold F. Cummings, Vit-

american Corp.; Bulletin, George H. McGlynn, Magnus, Mabee & Reynard, Inc., and vice-chairman, Louis E. Kalty, Progressive Drug Co.; Coordination, Dr. Charles E. Dutches, drug and chemical consultant and vice-chairman, John Cawley, George W. Luft, Inc.; Finance committee, Ralph A. Clark, J. T. Baker Chemical Co.; Legislative, James G. Flannigan, S. B. Penick & Co.; Luncheon greetings, S. F. Urban, E. R. Squibb & Sons, a Division of Olin Mathieson Chemical Corp. and vice-chairman, E. D. Bowes, Kimble Glass Co., a subsidiary of Owens-Illinois Glass Co.; Membership, William W. Huisking, Chas. J. Huisking Co., and vice-chairman, J. A. Singmaster, Jr., Monsanto Chemical Co.; Membership maintenance, William J. Schieffelin, III, Schieffelin & Co., and vice-chairman, Leon W. Miller, Barrett Division of Allied Chemical & Dye Corp.; "Operation Retort," F. M. Schwemmer, White Laboratories, Inc., and vice-chairman, James Day, Dow Chemical Co.; Publicity, Harrison S. Fraker, *Drug Topics* and *Drug Trade News*, and vice-chairman, W. T. Halsted, Thom. Leeming & Co.; Section activities, W. Boyd O'Connor, Ayerst Laboratories Division of American Home Products Corp., and vice-chairman, Ralph A. Clark, J. T. Baker Chemical Co.; Tariff, Fred G. Singer, E. I. du Pont de Nemours, Inc., Wilmington, Del., and vice-chairman John Fasoli, American Cyanamid Co.; Time and Place Committee for Annual Meeting, Griffin Crafts, J. W. Wilson Glass Co., and vice-chairman, Paul J. Cardinal, Hoffman-LaRoche, Inc.; Trade activities, coordinator, Lloyd I. Volckening, Ivers-Lee Co., and vice-coordinator, Sydney N. Stokes, van Ameringen Haebler, Inc.

—★—

#### Wyandotte Sales Increase

Net sales and income of Wyandotte Chemicals Corp., Wyandotte, Mich., showed a slight increase for the third quarter of 1956, it was announced recently. Sales for the three-month period totaled \$21,700,000 as compared with \$20,500,000, in a similar period a year ago. Net income for the third quarter rose to \$1,443,000, equal to share earnings of 92 cents, as compared with \$1,170,000 and 82 cents, in the corresponding period of 1955.

In the first nine months of 1956, Wyandotte reported total sales of \$58,900,000. Net income in that period amounted to \$3,600,000, equal to share earnings of \$2.25. According to Robert B. Semple, Wyandotte president, results for the nine-month period last year were not comparable because of a strike that closed the company's major productive units for 82 days.

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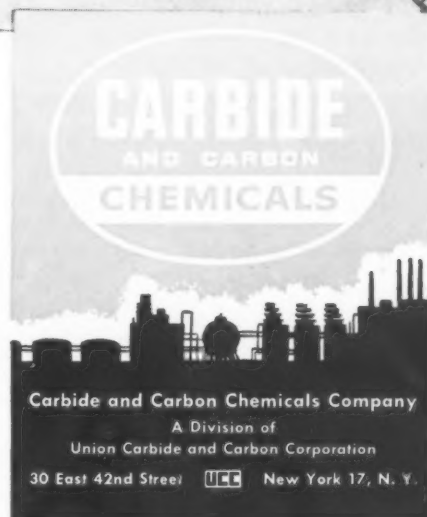
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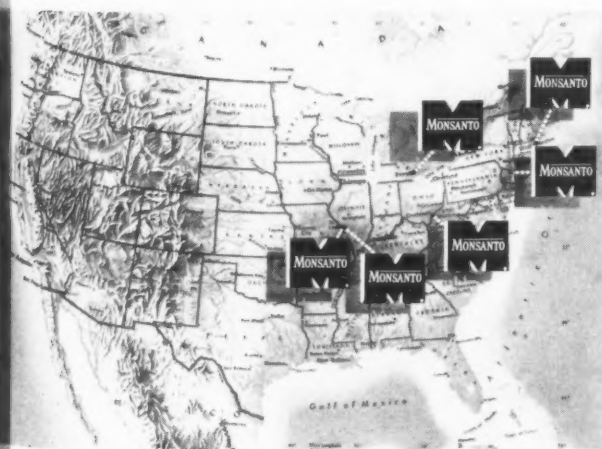
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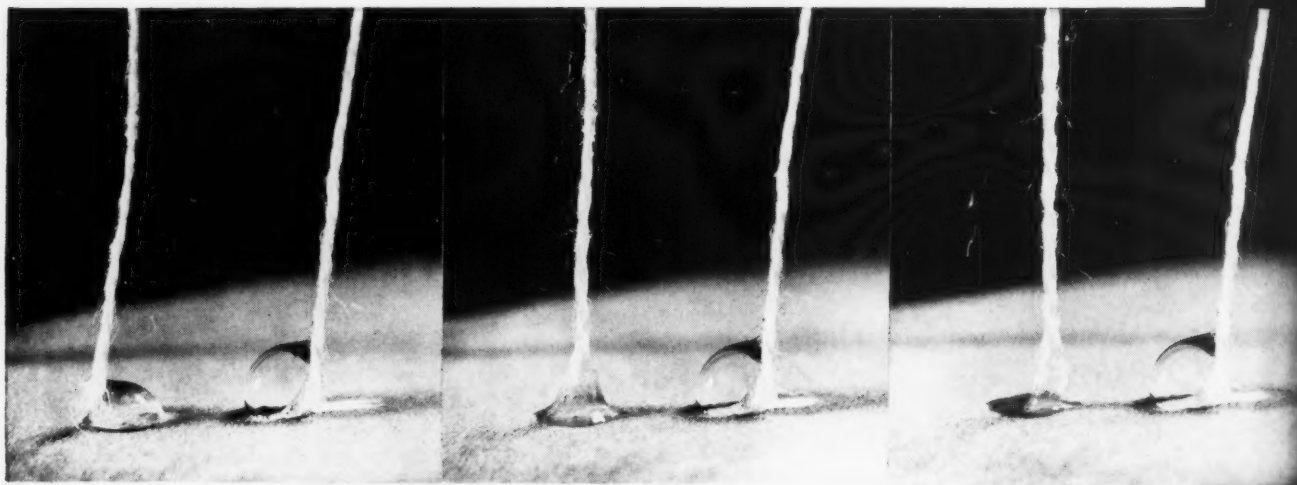
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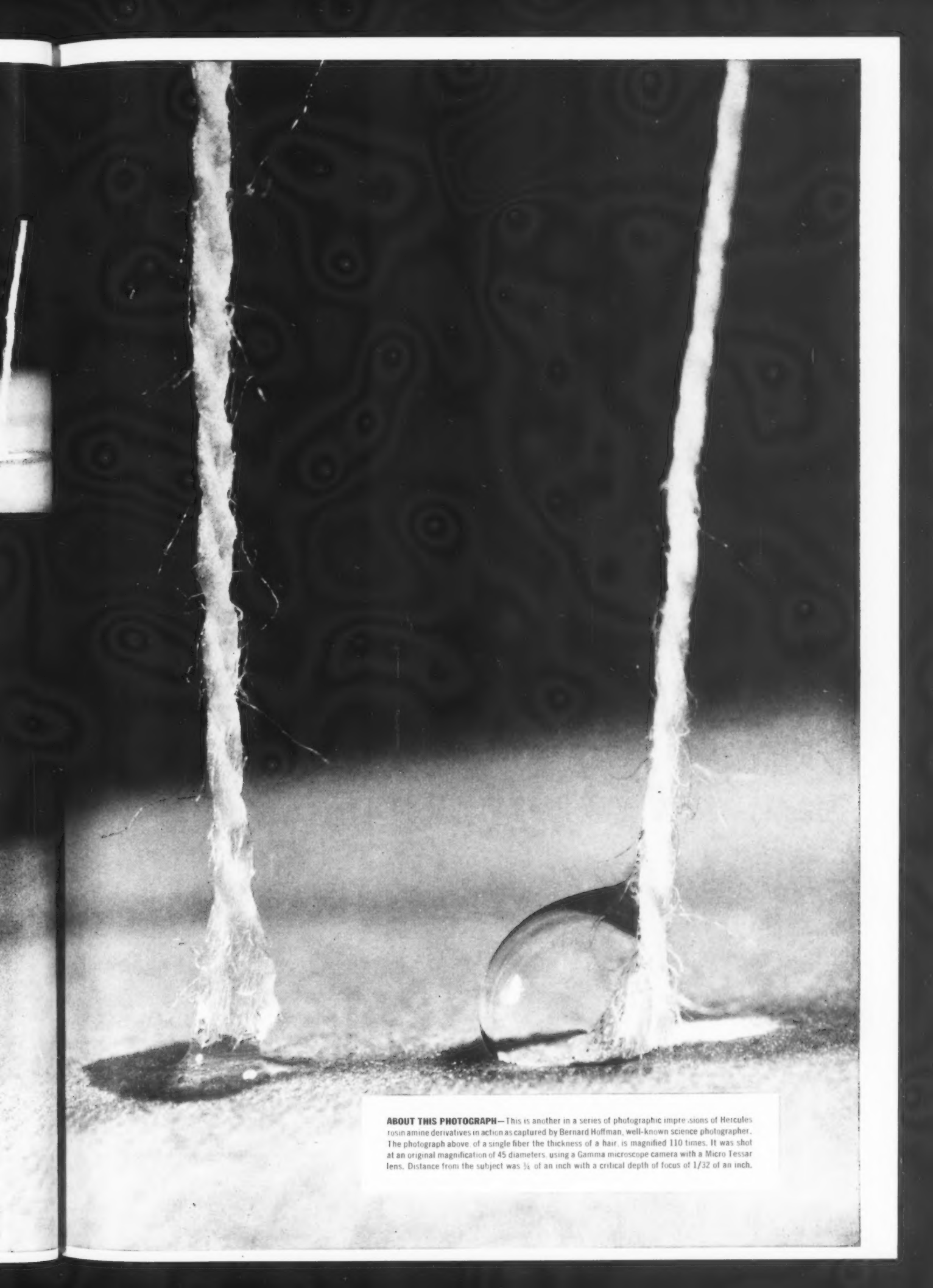


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**ABOUT THIS PHOTOGRAPH**—This is another in a series of photographic impressions of Hercules rosin amine derivatives in action as captured by Bernard Hoffman, well-known science photographer. The photograph above of a single fiber the thickness of a hair, is magnified 110 times. It was shot at an original magnification of 45 diameters, using a Gamma microscope camera with a Micro Tessar lens. Distance from the subject was  $\frac{3}{4}$  of an inch with a critical depth of focus of  $\frac{1}{32}$  of an inch.

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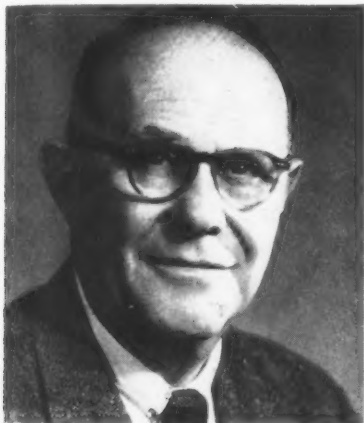




# News

## Peutet in New Post

Jean Paul Peutet has been named sales training consultant for Los Angeles and White King Soap



Jean Paul Peutet

Co., Los Angeles, it was announced recently by Mart C. Spiegel, general manager. In his new post, Mr. Peutet will be responsible for the development of sales training and related programs. Prior to joining Los Angeles and White King, Mr. Peutet was a private consultant in the soap field. He previously had served for 20 years as a sales training specialist with Procter & Gamble Co., Cincinnati. He was also sales training director for Purex Corp., South Gate, Calif., and a sales education specialist for the California State Department of Education.

## Glycerine Floor Asked

E. O. Gillam, president of Gillam Chemicals, Inc., Fort Worth, Tex., has called for a floor to be placed on the price of glycerine. In a recent telegram to Secretary of Agriculture Ezra T. Benson, Mr. Gillam suggested that a floor of 25 cents per pound be placed on 80 percent crude glycerine and that Japanese and other imports be stopped.

"We received 13½ cents per pound last month for an 80,000

pound car of crude 80 percent glycerine," he declared. "The same sold in 1952 for 22 cents and up. Wholesale druggists now pay 40 cents per pound for refined glycerine and it retails at \$1.35 per pint, equal to about \$1.00 per pound. Small soapers' volume is too little to refine and large refiners hold the price as low as possible. Therefore small soapers are caught in the middle."

## TGA Resort Convention

The Toilet Goods Association, New York, has issued questionnaires to its members to determine the advisability of holding its annual convention at a resort site outside of New York. According to the announcement, the resort convention would not include the meeting of the scientific section which would continue to be held in New York.

## Gov't Appeals Soap Ruling

The Government has appealed to the United States Supreme Court Federal Judge Alfred E. Modarelli's order that entire grand jury proceedings of its civil anti-trust suit against three leading manufacturers of soaps and detergents and their trade association be made available to the defendants. The Government recently dismissed the four-year-old suit in order to appeal Judge Modarelli's mandate. The companies involved were Procter & Gamble Co., Cincinnati; Lever Brothers Co., New York; Colgate-Palmolive Co., New York, and the Association of American Soap and Glycerine Producers, Inc., New York.

In filing the appeal, representatives of Attorney General Herbert Brownell, Jr., said it was against the public interest to surrender the grand jury proceedings on the grounds that disclosure would violate traditional secrecy and impair grand jury processes.

## Lever Appoints French

The appointment of William T. French to the newly-created position of director of corporate



William T. French

development of Lever Brothers Co., New York, was announced last month by Milton C. Mumford, executive vice-president. In his new post, Mr. French is concerned with the development of plans for new products and the firm's entry into new fields of business. Prior to joining Lever, Mr. French was executive assistant to the vice-president of operations of National Dairy Products Corp., New York.

## Purex Names Two

Frank G. Burke, Jr., and Oscar M. Burke, former officers of Manhattan Soap Co., New York, have been named to the board of directors of Purex Corp., South Gate, Calif., it was announced last month at the firm's annual meeting of stockholders. Purex acquired Manhattan last July. The stockholders also re-elected Adrien C. Pelletier as president and chairman of the board, and renamed Alan C. Stoneman and George A. Evans as executive vice-president and secretary-treasurer, respectively.

In addressing the stockholders, Mr. Pelletier declared that because of the expansion program that has been in effect for the past

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two years, Purex is now second largest producer of liquid and dry bleach and dry bluing in the United States. It is also one of the four largest in the production of light duty liquid detergents; one of the three largest household cleanser manufacturers; and one of the five largest in the manufacture of toilet soaps.

★

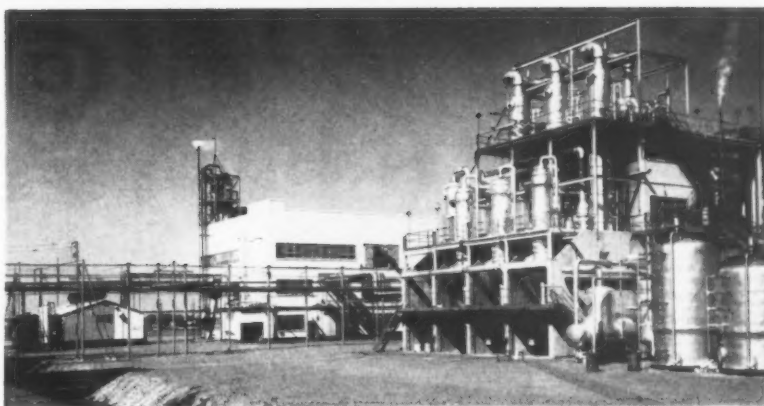
### New Solvay Peroxide Unit

The opening of a new hydrogen peroxide plant at Syracuse, N. Y., of Solvay Process Division, Allied Chemical & Dye Corp., New York, was announced at a press luncheon held at the Harvard Club, New York, last month. Views of the plant as well as end uses of the material were shown in a slide film, which D. H. Ross, Solvay's director of development explained to the luncheon guests.

Solvay's new process involves a chemical oxidation reaction, in contrast to the older electrolytic method of producing hydrogen peroxide. Involving catalytic hydrogenation and subsequent oxidation of complex organic materials, the new process results in the combining of by-product hydrogen from Solvay's adjacent electrolytic chlorine cells, with oxygen from the air, to produce hydrogen peroxide. A feature of the new plant is that it can easily be enlarged and this, plus additional capacity which has been installed by other producers, ensures a stable supply situation so that new uses of hydrogen peroxide may be developed with confidence of an adequate supply.

In addition to such traditional uses as a bleaching agent for industrial and household use, hydrogen peroxide is also moving into such advance fields as a propellant for rockets.

I. H. Munro, vice-president of the Solvay Process Division, welcomed the guests at the luncheon and pointed out that Solvay, which is celebrating its 75th anniversary this year, is extremely proud of the expansion program the company has undertaken in the past



New Solvay Process Division hydrogen peroxide plant in Syracuse, N. Y.

decade. The hydrogen peroxide development is one of the most important steps taken by Solvay, he said.

★

### Dow Synthetic Glycerine

Dow Chemical Co., Midland, Mich., recently announced the commercial production of synthetic glycerine at its Texas division plant at Freeport. The product will be available in lined drums and in bulk through the Texas division and other terminals throughout the United States, Donald Williams, vice-president and director of sales, said in announcing Dow's entry into the synthetic glycerine field.

Dow's production process utilizes propylene as the basic raw material. This petroleum gas has been used commercially in industrial manufacture of glycerine since the synthetic grade was introduced in 1947.

★

### Shulton Sales Up

Sales and earnings of Shulton, Inc., New York, showed a slight increase in the first nine months of 1956, it was announced recently. Net sales for the nine months ended Sept. 30, totaled \$18,471,209, as compared with \$15,648,660 in the corresponding period of 1955. Net income for the nine months ended with September increased to \$1,913,455, equal to share earnings of \$1.56, from \$1,837,396 and \$1.50, in a similar period a year ago.

In the third quarter of 1956,

Shulton reported total sales of \$8,102,390, as compared with \$7,091,540, in the third quarter of 1955. Net income rose to \$1,300,031, or \$1.07 per share, from \$1,180,971, or 96 cents per share, for the similar three months last year.

★

### New Pennsalt Barges

Pennsylvania Salt Manufacturing Co., Philadelphia, recently announced the purchase of two new, 175-foot barges, designed to carry caustic soda and caustic potash simultaneously. The barges contain two cargo tanks which are divided into two compartments with capacities of 90,000 and 15,000-gallons of caustic soda and caustic potash, respectively. They will be utilized to carry cargo from Pennsalt plants at Calvert City, Ky., and Natrona, Pa., to consumers whenever feasible.

★

### New Oakite Cleaner

Oakite Products, Inc., New York, has added a new all-purpose liquid detergent to its line of industrial cleaners and sanitizers, it was announced recently. Called "Liqui-Det," the product is designed for use on floors of marble, terrazzo, ceramic tile, asphalt, rubber, vinyl and linoleum. It can also be utilized in cleaning walls, washrooms and plastic, metal and ceramic fixtures. "Liqui-Det" contains no soap and is effective in water of any temperature. Further information can be obtained from the company, 157 Rector St., New York 6.

### Mixing Reassigns Three

Three changes in its engineering division were announced recently by Mixing Equipment Co.,



Richard D. Boutros

Rochester, N. Y. Richard D. Boutros has been appointed vice-president and director of engineering while Milton Dykman has been named chief engineer. Howard C. Shufelt has been appointed assistant chief engineer.

Mr. Boutros had been chief engineer since 1949. He joined Mixing Equipment in 1946 following active duty in the Navy. He is a mechanical engineering graduate of the University of Virginia. For the past five years, Mr. Dykman has served as assistant chief engineer. He joined the company in 1946, after wartime duty with the Atomic Energy Commission. He was graduated from Louisiana State University with a degree in mechanical engineering. Mr. Shu-

Milton Dykman



felt, who has served with the engineering division since February, 1955, is a mechanical engineering graduate of the University of Rochester.

★

### Cos. Chems Meet Dec. 13

A scientific session featuring seven papers on cosmetic science will highlight the 11th annual meeting of the Society of Cosmetic Chemists to be held at the Hotel Commodore, New York, Dec. 13. Included among the papers to be presented at the session are: "New Developments in Glass Containers," by Dr. William R. Prindle, Hazel-Atlas Glass Co., Wheeling, W. Va., and "Gas Chromatographic Analysis of Aerosol Products," by M. J. Root, G. Barr and Co., Chicago. Other events listed on the convention program are the installation of 1957 officers and a cocktail party and dinner dance.

★

### Keating Joins Lentheric

Joseph Keating has joined the Lentheric division of Helene Curtis Industries, Inc., Chicago, in a sales management capacity, it was announced recently by Jack Mohr, president of Lentheric. Mr. Keating is working out of the New York office. He attended Boston University where he majored in business administration. For the past two years he had been district sales manager in the New York area for Dorothy Gray Salons.

Howard Shufelt



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headquarters)



**STEPAN****LAURYL  
ALCOHOL SULFATES****STEPAN****AMIDES**

PRODUCT	TYPE	USES	ADVANTAGES
<b>LAURYL ALCOHOL SULFATES</b>			
<b>Stepanol WA Paste</b>	Sodium Lauryl Sulfate	Liquid or paste cream shampoos. Emulsifier for use in cosmetics. Rug and upholstery shampoos.	Outstanding foam and foam stability. Light color—bland odor. Superior detergency and wetting.
<b>Stepanol WAQ</b>	Sodium Lauryl Sulfate	Liquid or paste creme shampoos. Emulsifier for use in cosmetics. Rug and upholstery shampoos. For use where viscous liquid instead of paste is desired.	Outstanding foam and foam stability. Light color—bland odor. Superior detergency and wetting.
<b>Stepanol WA Special</b>	Sodium Lauryl Sulfate	Liquid or paste creme shampoos. Emulsifier for use in cosmetics. Rug and upholstery shampoos. For use where viscous liquid instead of paste is desired.	Outstanding foam and foam stability. Light color—bland odor. Superior detergency and wetting. Low inorganic salt content. Lighter viscosity makes for easier handling and compounding.
<b>Stepanol WAT</b>	Triethanolamine Lauryl Sulfate	Clear liquid shampoos. Foaming hand cleansers. Liquid bubble bath.	Low cloud point, outstanding color, foaming, detergency and wetting.
<b>Stepanol DEA</b>	Diethanolamine Lauryl Sulfate	Clear liquid shampoos. Foaming hand cleansers. Liquid bubble bath.	Low cloud point, outstanding color, foaming, detergency and wetting.
<b>Stepanol AM</b>	Ammonium Lauryl Sulfate	Liquid, creme or paste shampoos.	For use where low pH is required. Good detergency, wetting and foaming.
<b>Stepanol Mg</b>	Magnesium Lauryl Sulfate	Rug and upholstery shampoos.	Better cloud point than sodium or ammonium salts.
<b>Stepanol ME Dry</b>	Sodium Lauryl Sulfate Powder, U.S.P.	Liquid and dry shampoos. Emulsifying agent for waxes and creams.	Exceptionally high active content. Excellent foaming detergent and emulsifying properties.
<b>Stepanol ME Dry AW</b>	Sodium Lauryl Sulfate	Detergent and foaming agent for dentrifices. Wetting agent for pharmaceuticals.	Exceptionally high active content. Excellent foaming detergent and emulsifying properties. Unsulfated alcohol content is held to 0.5% max.

**AMIDES**

<b>Stepan T-6-A</b>	Alkanolamide	Liquid bubble baths.	Excellent foam stabilizer for surfactants even in presence of soap.
<b>Stepan T-6-B</b>	Alkanolamide	Clear and creme shampoos, liquid synthetic skin cleansers, high viscosity, concentrated, hard surface cleaners.	Thickening agent. Auxiliary detergent. Some emolliency.

**STEPAN****HIGH PURITY  
AMIDES****STEPAN****DETERGENT  
SPECIALTIES****PRODUCT****TYPE****USES****ADVANTAGES****Stepan LIPA**

Alkanolamide

Detergent hand cleansers, shampoos, synthetic heavy and light duty detergents.

Superb foam stabilizer. Auxiliary detergent.

**Stepan S-86**

Alkanolamide

Textile scouring and leveling. Perfume solubilizer.

Excellent detergency and some softening.

**Stepan HDA-7**

Alkanolamide

Hard surface cleaning compounds.

Tolerates up to 10% complex phosphates in solution.

**Stepan LDA**

Alkanolamide

Liquid synthetic detergents.

Excellent foam stabilizer and some thickening.

**Stepan ADT**

Alkanolamide

Base for low solids, high viscosity liquid cleaners.

Thickening agent, detergent.

**HIGH PURITY  
AMIDES****Stepan P-616**

Alkanolamide

As foam stabilizer for liquid dishwashing detergents, shampoos and all hard surface cleaners.

Guaranteed 90% minimum amide content. Enables formulators to use smaller percentages in formulations. Excellent foam stabilizer and thickener. Amide content 94% minimum lauric amide.

**Stepan P-621**

Alkanolamide

As foam stabilizer for liquid dishwashing detergents, shampoos and all hard surface cleaners.

Economical source of foam stabilization and emolliency based on a blend of lauric and myristic amides. 90% guaranteed minimum amide content.

**Stepan P-650**

Alkanolamide

As thickening agent for liquid dishwashing detergents, shampoos and all hard surface cleaners.

A very economical thickening agent and emollient. Contributes some foam stabilization.

**DETERGENT  
SPECIALTIES****Stepanol B-153**

Ammonium alkyl phenoxy polyoxyethylene sulfate

Liquid dishwashing formulations, car shampoos or any application where high, attractive foam is desired.

High foamer with attractive closely knit bubble. Good wetter.

**Stepanol DS-60**

Desalted sodium alkyl aryl sulfonate in alcoholic solution.

Base for high foaming liquid detergent formulations.

Source of high foam and detergency for which AAS is well known. Low salt content (0.5% max.) and alcohol content enables blending with wide range of other types surfactants.

**Stepanol T-74**

Triethanolamine alkyl aryl sulfonate

Liquid detergent formulations. Car shampoos, bubble baths.

Completely water soluble. Low cloud and freeze points.

**Stepanol T-28**

Compounded, stabilized sodium fatty alcohol sulfate.

Car shampoos, bubble baths.

Fine viscosity and stable foam.

**Stepanol LAS  
Concentrate**

Compounded, stabilized sodium lauryl alcohol sulfate.

Textile detergent. Rug and upholstery shampoo for on-location work.

Excellent cotton detergent. High stable foam.



## LIQUID DETERGENTS



## NONIONICS

PRODUCT	TYPE	USES	ADVANTAGES
<b>Concentrate No. 1353</b>	Concentrated blend of sulfated vegetable oils plus liquid petrolatum.	Base for non-lathering oil shampoos and industrial skin cleaners.	Good grease emulsifier and mild detergent.
<b>Stepanate T</b>	Sodium Toluene Sulfonate	{ Solubilizing and coupling agent for organic surfactants and phosphates. Especially useful with amides such as Stepan P-616. Also raw material for cresol manufacture.	{ Makes possible the formulation of cleaners using otherwise incompatible materials.
<b>Stepanate X</b>	Sodium Xylene Sulfonate		
<b>LIQUID DETERGENTS</b>			
<b>Stepan LD-44</b>	Completely formulated liquid detergent.	Liquid dishwashing detergent.	Excellent flash foam, foam stability, detergency and grease emulsifying. Based on sodium alkyl aryl sulfonate.
<b>Stepan LD-55</b>	Completely formulated liquid detergent.	Liquid dishwashing detergent.	As above, except based on ammonium alkyl aryl sulfonate.
<b>Stepan LD-55A</b>	Completely formulated liquid detergent.	Liquid dishwashing detergent.	As above, with slightly lower active and solids content.
<b>Stepan LD-44 Concentrate</b>	Completely formulated liquid detergent.	Liquid dishwashing detergent.	Same as Stepan LD-44 but highly concentrated for economy in shipping.
<b>Stepan LD-99 Concentrate</b>	Completely formulated liquid detergent.	Liquid dishwashing detergent.	Excellent flash foam, foam stability, detergency and grease emulsifying. A concentrate similar to Stepan LD-44 Concentrate with slightly different blend of nonionics and anionic detergents.
<b>Stepan RB-98 Concentrate</b>	Completely formulated liquid detergent.	Liquid dishwashing detergent, particularly for institutional and sanitation fields.	A high foaming liquid dishwashing detergent specially formulated to retain high viscosity when diluted with water.
<b>NONIONICS</b>			
<b>Makon No. 4</b>	Nonyl phenoxy polyoxyethylene ethanol	Base for sulfating to form water soluble high foaming anionic detergent.	Oil soluble emulsifier.
<b>Makon No. 10</b>	As above plus additional ethylene oxide.	Detergent and emulsifier for all types cleaning formulations. General textile detergent as dye assistant and wool, cotton and synthetic fibre scouring agent. Agricultural insecticide emulsifier.	Water soluble.

Note: For nonionics of fatty acid condensate type refer to Amides.

## DIMETHYL SULFOXIDE

**STEPAN**

Dimethyl Sulfoxide is a clear, water white, very hygroscopic and completely water soluble liquid. Despite its being water soluble it dissolves many organic compounds and is unusually selective in its solubility characteristics for hydrocarbons. Also of particular interest are its high boiling point, high flash point and low freezing point (in eutectic mixtures with water).

### PHYSICAL PROPERTIES

Molecular weight	78	Specific heat	.5 cal/g as solid .7 cal/g as liquid
Melting point	18.45°C (supercools easily)	Heat of vaporization	ca 175 cal/g
Boiling point (760 mm)	189°C	Heat of solution	60 cal/g
Spec. gravity (20°C)	1.100	Heat of fusion	20 cal/g
Refractive index (n <sub>D</sub> <sup>21</sup> )	1.4787	Heat of combustion	6050 cal/g
Vapor Pressure	at 20° 30° 47.4° 56.6°C mm .37 .79 2.82 5.11	Flash point (°C)	95° (open cup)
Viscosity 27°C	1.98 cps	Coefficient of expansion	.00088
		Dielectric constant	45

## HIGHER ALKYL PHENOLS

**STEPAN**

Stepan offers a complete line of higher alkyl phenols including nonyl, dinonyl, octyl, dioctyl and butyl phenol. Other special higher alkyl phenols can be tailored to meet your own requirements. Among the uses indicated for these alkylated phenols are an intermediate in the preparation of lube oil additives, anti-oxidants, anti-skinning agents, as a starting point in the preparation of many resins and plasticizers as well as non-ionic surface active intermediates.

## ETHOXYLATING

**STEPAN**

The new Stepan Plant in Millsdale near Joliet, Illinois, is fully equipped to serve your requirements for reactions involving a labile hydrogen atom and ethylene oxide. Also available is custom esterification involving fatty acid and an amide, alcohol or other similar compounds. These Stepan services are available for either processing materials furnished by you or if preferred we will furnish ethoxylated or esterified products to your specifications.

## CUSTOM BLENDING

**STEPAN**

Many formulators find the completeness of the Stepan line of synthetic detergent raw materials makes possible important savings. For example, where suitable, less than carload materials totaling a carload can be blended, at small additional cost, and the carload price savings effected on the individual items. Also it is readily possible to order individual items in mixed, truckloads or carloads, again effecting the carload or truckload price on the individual items.

## LABORATORY FACILITIES

**STEPAN**

The Stepan Chemical Company has complete laboratory facilities to assist you in every way possible toward developing the product most suitable to your needs. Our technical staff will also be pleased to consult with you on new products as well as new applications of our present products.



The image features three vertical test tubes against a dark background. The two tubes on the left are white, while the one on the right is grey. The grey tube contains several small white circles at its base, representing bubbles. The text 'PRODUCT SPECIFICATIONS' is positioned to the right of the tubes.

**PRODUCT  
SPECIFICATIONS**

*The* **STEPAN** *chemical co.*

*20 north wacker drive, chicago 6, illinois  
telephone: Central 6-5511*



**THE**

**STEPAN**

**CHEMICAL COMPANY**

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**Executive Office: 20 North Wacker Drive  
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Telephone: Central 6-5511**

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**PHENYL ETHYL ALCOHOL, N. F.**—indis-

pensable rose-like fragrance—basic to many applications . . . superior quality and stability.

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**ISO CYCLO CITRAL-S\***—extremely useful in floral soap compositions; clear, natural note of the green leaf.

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**SYNALYL D\*** — suggests highly refined grade of linalyl acetate. Excellent substitute at definite cost saving.

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### Abate Joins Wyandotte

Michigan Alkali Division of Wyandotte Chemicals Corp., Wyandotte, Mich., recently announced



Frank M. Abate

the addition of Frank M. Abate to its midwestern sales staff. Mr. Abate will represent the company in Cleveland. Prior to joining Wyandotte, Mr. Abate was an industrial engineer with Alemite Corp., Chicago. He previously had been associated with Chrysler Corp., Detroit, as a chemical engineer and Klem Chemical Co., Dearborn, Mich., as an industrial chemical salesman.

### 700 Attend Lever Banquets

Nearly 700 employees of Lever Brothers Co., New York, attended annual banquets of the firm's Quarter Century Clubs, held last month in New York and six plant cities across the nation.

In New York, more than 90 employees met at the Hotel Delmonico to greet new members and hear an address by William H. Burkhardt, Lever president. In his speech, Mr. Burkhardt paid tribute to the company's long-service employees and emphasized their importance to the Lever organization. He also drew attention to the fact nearly one-third of firm's employees had been with Lever 15 or more years.

New members of the club were presented with \$100 U. S. Savings Bonds and diamond-studded stick pins. Those who qualified for membership at the New York meet-

ing are J. Lawrence Minihan, import and export supervisor; Ernest K. Holt, development engineer, and Everett D. Kilmer, chief perfume chemist.

### New Stepan Phenols

Stepan Chemical Co., Chicago, recently announced the commercial production of a new line of alkylated phenols at its Milledale, Ill., plant. The products, nonylphenol and dinonylphenol, are colorless liquids with a low ash and moisture content. They may be used as anti-oxidants, anti-skinning agents and as intermediates in the manufacture of non-ionic surface active agents and lubricating oil additives. Further information and samples can be obtained from the company, 20 North Wacker Drive, Chicago 6.

### Dreyer Appoints Gillies

W. M. Gillies Co., Los Angeles, has been appointed west coast sales representative for P. R. Dreyer, Inc., New York, it was announced recently by Leonard S. Brooks, managing director of Dreyer. According to Mr. Brooks, the appointment of Gillies gives Dreyer coast-to-coast sales representation for its line of essential oils and aromatic chemicals.

### Terry in New Post

David E. Terry has been appointed fatty nitrogen products manager for General Mills, Inc., Minneapolis, Minn., it was announced recently by W. F. Mitchell, general manager of the company's chemical division. In his new post, Mr. Terry will be responsible for fatty nitrogen sales and promotional activities in all areas of industry served by the chemical division.

A graduate of the University of Minnesota with a degree in chemical engineering, Mr. Terry joined General Mills in 1939 as a research chemical engineer. In 1952 he was named market development engineer and in 1955 was appointed district sales manager for the chemical division in Kansas City.

### SCC Medal to Miss Wall

Florence E. Wall will receive the 1956 medal award of the Society of Cosmetic Chemists at



Florence E. Wall

the group's Dec. 13 meeting at the Hotel Commodore, New York. Consulting chemist, author, and lecturer, Miss Wall is the first woman to receive this honor, which is granted in recognition of outstanding contributions to the cosmetics field.

Miss Wall left high school science teaching for the chemical industry during the First World War. In 1924 she entered the cosmetics field by joining Inecto, Inc. She became interested in educating beauticians and consumers in the use of cosmetic products, and in 1936 New York University invited her to organize the first college-accredited courses related to cosmetics. She has since then authored five textbooks and more than 300 articles in this branch of industrial education.

During the Second World War Miss Wall served as technical editor for General Aniline & Film Corp. and later for Ralph L. Evans Consulting Laboratories. She has been an independent consultant and author since 1947.

Miss Wall was one of the first women to become a Fellow of the American Institute of Chemists. She holds bachelor of arts and bachelor of education degrees from St. Elizabeth College, Convent, N. J. and a master of arts degree from New York University.

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the same viscosity, the same degree of emulsification, and  
the stability—batch after batch—without detergent variation  
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iron free and has a low salt content. Neutral and stable,  
continuing tests demonstrate unvarying results from lot to lot.

Pendit WA COSMETIC performs admirably as a deter-  
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### Kline Joins Shulton

Charles H. Kline has joined Shulton, Inc., New York, as scientific director, it was announced



Charles H. Kline

recently by George L. Schultz, president. In his new post, Dr. Kline will be responsible for the direction of the firm's research program. Prior to joining Shulton, Dr. Kline was manager of the chemical development division of Climax Molybdenum Co., New York.

### Hitchcock in New Post

Warner-Lambert Pharmaceutical Co., Morris Plains, N. J., recently announced the appointment of Frederick C. Hitchcock to the newly-created post of director of new products. In this position, Mr. Hitchcock will be responsible for the commercial development and marketing of new toiletry products. He was formerly associated with General Foods Corp., White Plains, N. Y.

### Olin Mathieson Sales Up

Net sales and income of Olin Mathieson Chemical Corp., Baltimore, showed a substantial gain in the first nine months of 1956, it was announced recently by Thomas S. Nichols, president. Sales for the nine-month period totaled \$455,542,174, an increase of 11.3 percent over the total of \$409,141,699, reported in a similar period a year ago. Net income for the first nine months amounted to \$35,903,232, equal to share earnings of \$2.71, an increase of 10.6 percent over the

\$32,456,307 and \$2.60, reported in the corresponding period of 1955.

Third-quarter net sales totaled \$155,491,766, as compared with \$138,340,735 in the third quarter of 1955. Net income rose to \$14,299,715, equal to share earnings of \$1.08, from \$12,514,568 and \$1.00, in the similar 1955 period.

### Cos. Chem. Nominees

The following slate of officers and members of the Society of Cosmetic Chemists has been selected by the nominating committee, to be voted upon by the general membership during the annual meeting Dec. 13. Sabbath J. Strianse, Vick Chemical Co., New York, president; James H. Baker, Gar-Baker Laboratories, Inc., New York, and Ross Whitman, Rayette, Inc., St. Paul, Minn., for president-elect; Robert A. Kramer, Evans Research & Development Corp., New York, secretary; Walter A. Taylor, Chesebrough-Pond's, Inc., Clinton, Conn., treasurer. Nominees for the board of directors are: Gabriel Barnett, Warner-Hudnut, Inc., New York; Savery F. Coneybear, Colgate-Palmolive Co., New York; Lester I. Conrad, American Cholesterol Products, Inc., Milltown, N. J.; James C. Ervin, Procter & Gamble Co., Cincinnati; Stillman R. Goff, Toni Co., Gillette Park, Boston; and Joseph Kalish, *Drug and Cosmetic Industry*.

### Emulsol Advances Raven

Arthur O. Raven has been named sales manager of Emulsol Chemical Corp., Chicago, a division of Witco Chemical Co., New York, it was announced last month. Mr. Raven was formerly assistant sales manager. He joined Emulsol in 1953 as sales office manager and assistant to the executive vice-president and previously had been associated with Abbott Laboratories, Chicago, as a technical sales representative.

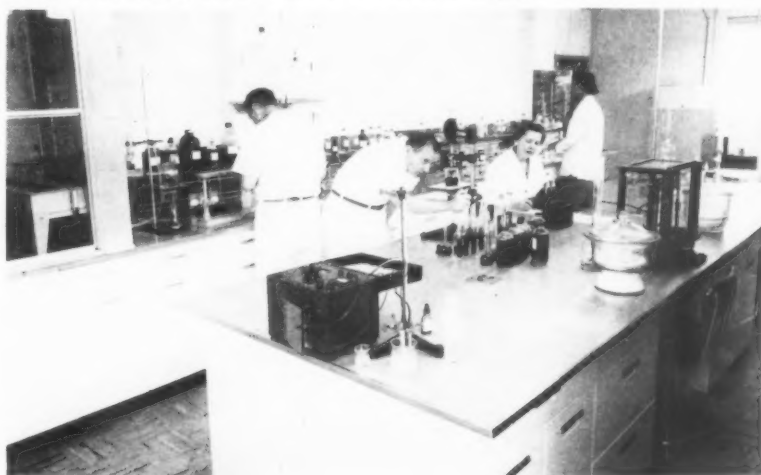
### Bridge Charabot Rep.

Bridge Chemical Co., Chicago, has been named sales representative for Charabot, Inc., New York, in six midwestern states, it was announced recently. Bridge will handle Charabot's line of essential oils in Illinois, Indiana, Iowa, western Michigan, Minnesota and Wisconsin.

### New DCAT Meeting Site

Galen Hall, Wernersville, Pa., will be the site of the 67th annual meeting of the Drug, Chemical & Allied Trades Section of the New York Board of Trade to be held Sept. 19-21, 1957, it was announced late last month by J. David Hayden, chairman. The association formerly held its meeting at Pocono Manor, Pa. According to Mr. Hayden, the move was necessitated by a need for larger quarters.

Newly completed addition to the research facilities of Fries & Fries, Inc., Cincinnati essential oils and aromatic chemicals firm, includes this analytical and control laboratory. Dr. George Bowden, who is in charge, is second from left.





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### Shell Advances Two

The appointment of two district managers of Shell Chemical Corp., New York, was announced



John F. Kroeger

recently by G. W. Huldrum, chemical sales division manager. John F. Kroeger, a technical salesman in Chicago, was named manager of the Newark, N. J. district, while John G. Dickerson, a technical sales representative in Detroit was appointed manager of the Boston district.

Mr. Kroeger joined Shell in 1951 as technologist in the eastern division offices in New York. During the Korean War he was recalled to military duty and on his return was transferred to Chicago as a technical salesman. Mr. Dickerson started with Shell in 1944 as a junior technologist in Martinez, Calif. The next year he was moved to the firm's San Francisco office and later worked as a technologist

John G. Dickerson



in various marketing and manufacturing offices on the west coast. In 1952 he was made supervisor of solvents at the company's technical service laboratory in Union, N. J. He was transferred to the Detroit district as a technical salesman in 1951.



### GA&F Names Berle

Charles H. Berle has been named special projects coordinator of the Dyestuff and Chemical Division of General Aniline & Film Corp., New York, it was announced recently by Dr. C. C. Schulze, manager of manufacturing of the division.

Mr. Berle was formerly manager of the Niagara Falls, N. Y., plant of International Minerals and Chemical Corp., New York, where he directed the production of chlorine, caustic potash and their derivatives.



### Leeben Color Moves

Robert T. Benjamin, president, Leeben Color & Chemical Co. recently announced that Leeben's plant, general office and laboratory have been moved to new quarters at 103 Lafayette St., New York 13. The new telephone number is WOrth 6-0330. The company specializes in supplying all types of certified, powdered colors for the food, drug and cosmetic industries. It also handles a complete color line for soaps, detergents, and chemical specialty products.

At the new location Leeben Color will have considerably larger facilities for every phase of its operations. The manufacturing and shipping departments have been streamlined and expanded to provide even better service. The size of the laboratory has been doubled so that faster and more complete service is available for solving the full range of technical problems relating to color that are brought to Leeben. This is Leeben's second expansion in recent years. In 1951 the Interstate Color Co. was purchased and their products integrated with the Leeben line.

### Wyandotte Names Two

Michigan Alkali Division of Wyandotte Chemicals Corp., Wyandotte, Mich., recently announced



Thomas J. Hetherman

the appointments of Thomas J. Hetherman as senior sales representative and Lyle B. Hawkins as assistant technical manager of the new products organic chemicals department.

In his new post, Mr. Hetherman, will cover Iowa, Minnesota, and North and South Dakota. He will headquarter in Chicago. Mr. Hetherman previously had served in the organic research department of Hercules Powder Co., Wilmington, Del.

Mr. Hawkins, who joined Wyandotte in 1948, was formerly the firm's Cleveland sales representative. In his new position, Mr. Hawkins will work on the industrial introduction of the firm's new organic chemicals.

Lyle B. Hawkins



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### Safety!

Halane is safe on cotton, nylon, rayon and acetate. Even if solid Halane were added directly to clothes of these fibers, it would not injure the fabrics. In 20-cycle laundry tests, clothes bleached with Halane showed only a 2% loss in tensile strength, compared with a 10% loss suffered with ordinary hypochlorite bleaching methods. Halane bleaching powders can be safely packaged in either glass containers or cardboard boxes.

### Controlled Bleaching!

The bleaching ingredient (active hypochlorous acid) is released from Halane at a controlled rate — depending upon individual bleaching conditions.

### Bleaching Effectiveness!

Even badly stained or grayed fabrics come out whiter after a Halane bleach. Halane will not form curds and is completely compatible when used along with synthetic detergents or soaps. It can be used in the soak, wash, or rinse cycles.

### Economy!

Halane is the most widely used organic, chlorine-bearing base for dry bleaches in the home-laundry field. As a result of this volume, and greater production economies, Halane is now available at new low prices . . . send for a Halane price schedule.

Our skilled chemists and engineers . . . modern research laboratories . . . and 65 years' experience as a leading producer of chemicals are at your service. For help in planning a formulation for the home-laundry market, send for the new Halane data sheet. *Wyandotte Chemicals Corporation, Dept. SCS-12, Wyandotte, Michigan. Offices in principal cities.*

## WYANDOTTE CHEMICALS



### MICHIGAN ALKALI DIVISION HEADQUARTERS FOR ALKALIES

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SOAP and CHEMICAL SPECIALTIES

## P&G Opens New Iowa Toilet Goods Plant

**A** NEW, multi-million dollar plant, designed for the production of shampoos and other toilet goods was opened on Oct. 31 by Procter & Gamble Co., Cincinnati, at Iowa City, Iowa. The unit is P&G's second facility for producing toilet goods products.

The new plant, which is located on 73 acres of what once was corn-growing land on the outskirts of Iowa City, has approximately 190,000 square feet of floor space. The plant building is 633 feet long and 803 feet wide. The front is primarily brick and glass, while the remainder of the structure is made of precast concrete panels and insulated metal panels which have a fluted aluminum exterior surface.

About 80 percent of the 150 employees were previously employed locally, while the remainder were experienced P&G employees transferred to Iowa City from Cincinnati and other installations. R. D. Marsden, formerly supervisor of the firm's other toilet goods plant in Cincinnati, has been transferred to Iowa City to head the new operation.

Other features of the plant include general office facilities, a meeting room which can seat 50 people, a recreation room, a repair shop, a storeroom that can stock 6,000 items, a packing room, bottle packing lines for "Drene" and "Liquid Prell," a warehouse, and shipping docks which can handle 35 trucks at one time.

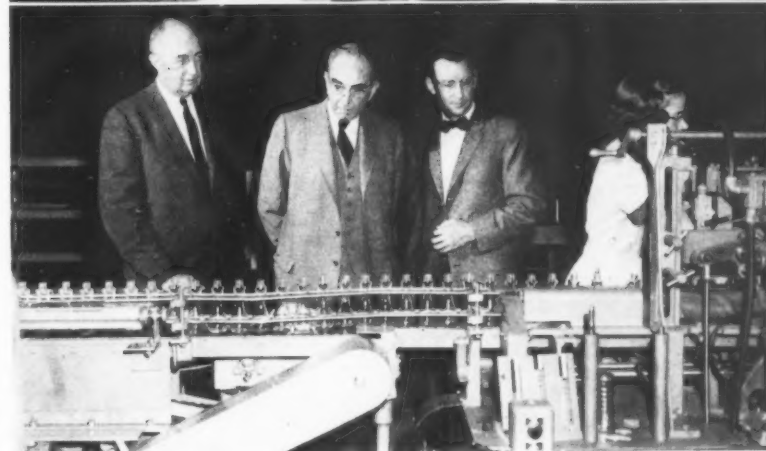
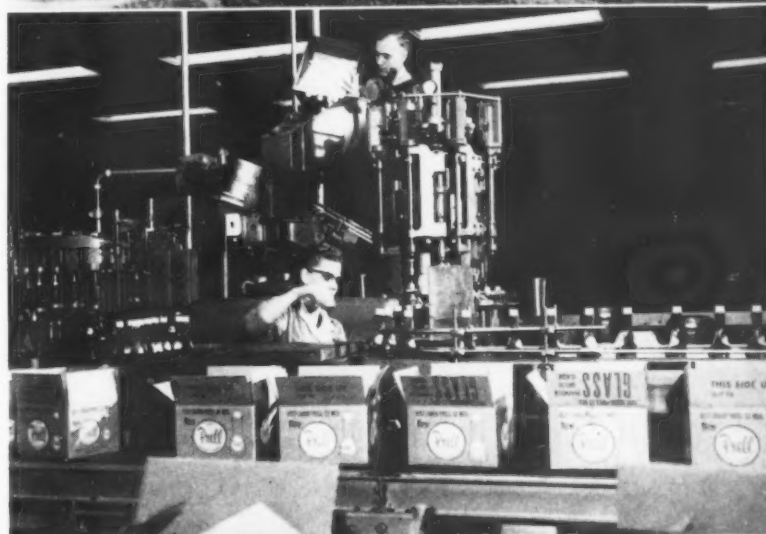
Official opening of the plant was marked by a four-day ceremony which featured talks by R. R. Deupree, P&G chairman, and Leo Heogh, governor of Iowa. Mr. Deupree opened the celebration by addressing business and civic leaders of Iowa City at a P&G reception and dinner held at the Hotel Jefferson.

The next day a luncheon was held for all employees followed by the formal opening of the plant. Speeches by Mr. Deupree, Governor Heogh and Iowa City Mayor

Leroy Mercer highlighted the ceremony. Other P&G executives who attended the opening were H. S. Cole, vice-president of the toilet goods division; D. I. Lowry, man-

ager of manufacture and product development for the toilet goods division; and O. M. Gale, manager of P&G's public relations department. Dr. Virgil Hancher, president of Iowa State University and Ray Bywater, president of the Iowa

More than four acres are enclosed under one roof of new toilet goods division plant of Procter & Gamble Co., at Iowa City, Ia. Formally opened Oct. 31, this is the second such plant to be put in operation by the division. Center photo shows "Prell" shampoo packaging line in 400 feet long packing room, which is 65 feet wide and has walls of glazed ceramic tile and acoustical ceilings. Room is completely air-conditioned. Inspecting a "Prell" packing line (bottom photo) are H. Schuyler Cole, P&G vice-president, toilet goods division; Richard R. Deupree, chairman of the board and Robert D. Marsden, superintendent, of new plant. "Drene" and "Shasta" shampoos, as well as "Gleem" and "Crest" toothpastes are produced at the Iowa City plant.



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assistance of those skilled and  
experienced in soap perfuming.

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City Chamber of Commerce also participated in the program.

The final two-days of the ceremony were devoted to "open house," in which the new unit was open for inspection by local residents. Regular scheduled tours of the plant began last month to any interested groups. Future appointments may be made by contacting Procter & Gamble, Iowa City, Ia.

### Babbitt Earnings Lower

Net income and earnings of B. T. Babbitt, Inc., New York, dropped sharply in the nine-month period ended Sept. 30, it was announced late last month. Net income in the first nine months of 1956 totaled \$189,820, equal to share earnings of 18 cents, as compared with \$486,080 and 47 cents, in the corresponding period a year ago. Net sales for the period were up to \$13,597,594 from \$13,103,338.

In the third quarter of 1956, Babbitt reported net income amounting to \$28,827. This compared with \$147,963, and 14 cents, in the similar 1955 period. The company did not report any profits in the '56 third quarter. Sales in that quarter dropped to \$4,797,926 from \$4,497,819, in the corresponding period a year ago.

### FMC Sales Record

Sales of Food Machinery and Chemical Corp., New York, and its subsidiaries, reached an all-time high during the nine-month period ended Sept. 30, it was announced last month by Paul L. Davies, chairman. Net sales for the first nine months of 1956 totaled \$221,204,001, as compared with \$197,191,438, in the corresponding period a year ago. Net income in the nine months ended with September rose slightly to \$11,870,135, equal to share earnings of \$3.53, from \$11,611,233 and \$3.54, in the first nine months of 1955. Share earnings for this year's period are based on 3,261,612 common shares, while the 1955 share breakdown is based on 3,154,732 shares.

### Lever Appoints Prentice

The appointment of Robert M. Prentice as manager of advertising policy development in the



Robert M. Prentice

recently-formed corporate advertising services division of Lever Brothers Co., New York, was announced last month by Michael J. Roche, division general manager. In his new assignment, Mr. Prentice will be concerned with the development of policies governing advertising agency selection, as well as the handling of advertising within the company. Mr. Prentice joined Lever in March of this year as product manager for "Spry." He was formerly associated with Compton Advertising Agency, New York.

### Spitaleri to Perry Bros.

Frank Spitaleri has joined Perry Bros., Woodside, N. Y., it was announced last month. In the perfume and cosmetics field for

Frank Spitaleri



about 35 years, Mr. Spitaleri, has been associated with Polak's Frutal Works, Inc., Middletown, N. Y., for the past 8½ years. Prior to that he was with Felton Chemical Co., Brooklyn, N. Y., for over 11 years. He has done independent consulting work and also has been employed in the cosmetics field. Mr. Spitaleri started his career with the old Chiris Company in Delawanna, N. J., later joined Morana, Inc.

He has been perfume formulator for soap, aerosols, and toilet preparations, has authored many articles in the field. A charter member of the American Society of Perfumers he is also a member of the Society of Cosmetic Chemists.

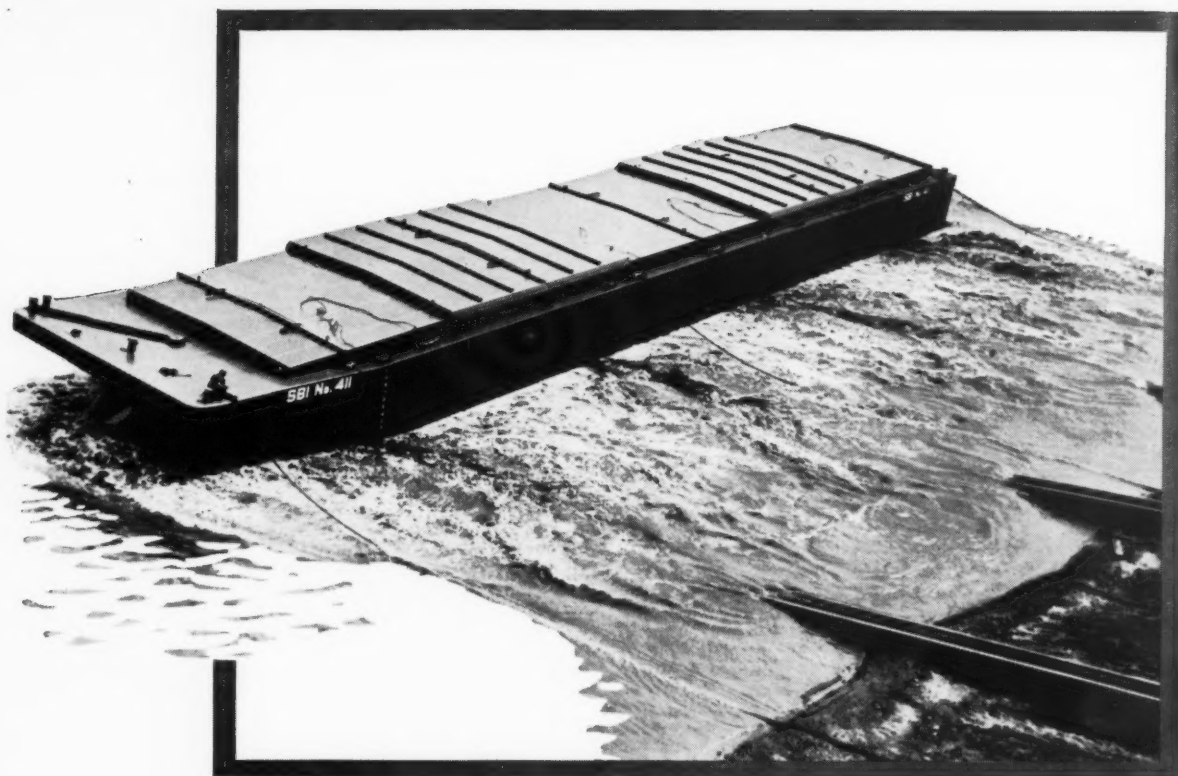
### Jefferson Chem. Expands

Jefferson Chemical Co., Houston, Tex., recently announced an expansion of facilities at its Port Neches, Tex., petrochemicals plant. The program is said to be the largest undertaken by the company since its formation in 1944.

According to George R. Bryant, president, the expansion will triple production facilities for ethylene, double the plant's capacity for ethylene glycol, and increase by 50 percent the production of ethylene oxide, a compound used in the manufacture of detergents. Present plans also call for increased production of a number of specialty chemicals such as morpholine, an emulsifier for rubber waxes and polishes, and the construction of facilities for the firm's entry into the production of propylene oxide, propylene glycol and other propylene derivatives.

### DCAT Hears Mintner

A discussion of the relationship of government to industry, by Bradshaw Mintner, former Assistant Secretary of the Department of Health and Welfare, highlighted the annual fall luncheon meeting of the Drug, Chemical and Allied Trades Section of the New York Board of Trade held at the Waldorf-Astoria Hotel, New York, Nov. 29.



## Joining the Olin Mathieson fleet

Here is one of the six new 1400-ton barges which will serve users of Mathieson chemicals. These 195-foot, all-steel barges are weather tight; the rolling hatch covers can be moved to expose 50% of the hold for easier loading and unloading.

The efficient use of water, rail and highway transportation helps customers get the full benefit of Olin Mathieson's multi-plant facilities. Whether you order by barge, car, truck, or drum, Olin Mathieson's experience with the logistics of the chemical process industries will enable you to buy to better advantage. Call your Olin Mathieson representative for complete information.



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**ORGANIC CHEMICALS:** Ethylene Oxide • Ethylene Glycols • Polyethylene Glycols • Glycol Ether Solvents • Ethylene Dichloride • Dichloroethylether • Formaldehyde Methanol • Sodium Methylate • Hexamine • Ethylene Diamine • Polyamines • Ethanolamines • Trichlorobenzene • Polychlorobenzene • Trichlorophenol



New perfume sniffer developed recently by Polak and Schwarz, Inc., New York. Unit, which is being given to P&S customers, consists of sniffer stand and holder. Device is compact and practical and is designed for office desk or use in the laboratory.

#### New Pal Products Plant

Pal Products Mfg. Corp., manufacturer of scouring powders and cleansers, has moved to a new two-story plant at 276 Warren St., Jersey City, N. J., it was announced recently by David Davis, president.

More than 25,000 square feet of floor space are provided in the new plant. Manufacturing, office and warehouse facilities are also available. Other features include several truck loading docks and a railroad siding. Prior to its relocation, Pal Products was located in Brooklyn, N. Y.

#### New DCAT Directory

The Drug, Chemical and Allied Trades Section of the New York Board of Trade has published its 1956-57 directory of members, it was announced last month by J. David Hayden, chairman. The 40-page, paper-bound volume lists all member firms by major industry classifications, and for the first time, by their secondary classification, where they have supplied this information. The book also includes a chronological listing of all

DCAT chairmen since the formation of the organization in 1890. Copies, which were sent free to all members, are available in limited supply from the DCAT, 291 Broadway, New York 7.

#### CMRA To Meet Feb. 19-20

A meeting of the Chemical Market Research Association, New York, will be held at the Sheraton Hotel, Philadelphia, Feb. 19-20, under the chairmanship of Walter C. Gwinner, Esso Standard Oil Co., New York. The theme to be studied at the meeting is "Our Next Five Years of Competition with Foreign Chemical Industry."

#### New Sandoz Surfactant

"Sandopan" DTC, a new surfactant, is described in a 40-page colored brochure published recently by Sandoz Chemical Works, Inc., 61-63 Van Dam Street, New York 13. Sandoz terms this product "crypto-anionic" because, though classified as an anionic, in certain applications its anionic properties remain hidden. Good stability to acid and alkali, wide compatibility, and good detergency and soil carrying power are claimed for the new surfactant. Unaffected by hard water "Sandopan" DTC is a good lime soap dispersing agent. It therefore suggests itself for use in combination with soap, whenever deposition of insoluble soaps is a problem. The product is claimed to rinse completely and easily.

New "Velvet Blend" shampoo, announced recently by Procter & Gamble Co., Cincinnati, comes in three formulations for "normal," "dry" and "oily" hair. Product is now being test marketed in a midwest and a far west city area.



# Bubbles with a man-sized job to do

Removing the grit and grime from a well-traveled automobile requires a cleaner with muscles. Leading synthetic detergents compounded with Atlantic Ultrawets can be made rugged enough to leave a clean, streakless shine on cars and locomotives, gentle enough for feminine hands and the finest fabrics. This is so because each of the Ultrawets has been specifically designed to do its cleaning job better.

The Ultrawets are only one member of the Atlantic family of petrochemicals (so you see a miniature oil refinery in the picture). Many new and profitable uses for these versatile Atlantic petrochemicals are constantly being applied in cost-cutting processes, in the development of new products and the improvement of well-established brands. For further information on Atlantic petrochemicals and service, write or wire The Atlantic Refining Company, Dept. E-12, at the nearest office listed below.



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Company, Ltd.

In Europe: Atlantic Chemicals SAB,  
Antwerp, Belgium  
In South America: Atlantic Refining  
Company of Brazil, Rio de Janeiro



### Babb Bank Trustee

The election of Jervis J. Babb as a trustee of the Bank of New York was announced last month by Albert C. Simmonds, Jr., president. Mr. Babb is chairman and former president of Lever Brothers Co., New York. He is also a trustee of the Dry Dock Savings Bank of New York, and a director of the Green Giant Co., Le Sueur, Minn.

### Roure-Dupont Catalog

The issuance of a new catalog for its line of essential oils and aromatic chemicals and related materials was announced recently by Roure-Dupont, Inc., New York. A feature of the catalog is a white and gold imprinted cover. The catalog contains, in addition to a brief history of the firm, five sections covering various Roure-Dupont products. Each section has a tab for easy reference. Covered are: essential oils, aromatic chemicals, "Basodors," creations, and industrial-household products.

The final section covers Roure-Dupont products for perfuming para blocks, air fresheners, insecticides, aerosols, household deodorants, etc.

### Holds Anniversary Meeting

The Chicago Perfumery, Soap and Extract Association will celebrate its fiftieth anniversary at its annual Christmas ball to be held in the Conrad Hilton Hotel, Chicago, Dec. 15. The ball will be preceded by a cocktail party. The CPSEA was founded in 1906 by 12 Chicago businessmen engaged in the manufacture and sales of cosmetics, drugs, and allied products. It presently has a membership of 400.

### GMA Elects Sims

William L. Sims, 2d, president of Colgate-Palmolive Co., New York, has been elected third vice-president of the Grocery Manufacturers of America, New York, at the association's 48th annual meeting held at the Waldorf-

Astoria Hotel, New York, Nov. 12-14. Mr. Sims, who joined Colgate in 1924, has been president



William L. Sims, II

since July, 1955. He previously had served as executive vice-president and president of Colgate-Palmolive International.

### New Waterless Cleaner

A new waterless skin cleaner, designed to remove paint, heavy grease, tar, inks and related soils, has been introduced by S&E Chemical Co., Chicago, it was announced recently. Tradenamed "Essanee," the product can be rinsed off with shop cloths or paper towels. It is available in 16-ounce cans and 64-ounce dispensing containers. Further information can be obtained from S&E, 1751 North Harding Ave., Chicago 47.

New "Essanee" waterless hand cleaner in 64 ounce dispensing unit. The product, which also comes in 16-ounce cans, is made by S&E Chemical Co., Chicago.



### New Petrochemicals Unit

Plans for the construction of a 40-50 million dollar petrochemicals plant in the Ohio Valley area, were announced last month by Commercial Solvents Corp., New York, and Columbia Gas System, Inc., New York.

According to the announcement, the project has been under joint investigation by the two companies for the past several months. Present plans call for construction to begin early in 1957. Prior to the plant's completion the two firms will form a new, jointly-owned company which will ultimately specialize in the entire field of ethylene and other hydrocarbon derivatives.

The joint project is based on the utilization of hydrocarbons to be extracted from the reserves of natural gas owned or controlled by Columbia Gas in the Appalachian area.

### Sugar Based Detergents

(From Page 49)

ing any deleterious symptoms. Sucrose esters can, therefore, be considered nontoxic.

### Conclusions

**M**ONOACYL esters of sucrose containing 12 to 18 carbon atoms in the acyl group are readily formed by the alcoholysis of methyl esters with sucrose in the presence of a basic catalyst. Evaluation studies indicate that these esters are emulsifying agents and good detergents. They are sufficiently stable to hydrolysis for use in cotton detergency applications. Nontoxicity indicates particular usefulness in cosmetic, pharmaceutical, and food applications.

### Acknowledgement

The investigation described in the foregoing paper was supported by the Sugar Research Foundation, Inc., New York.

### References

1. C. B. Brown, *Research* (London), 1, 46-8 (1947).
2. J. Ross and G. Miles, *Oil and Soap*, 19, 99-102 (1941).



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### Reif Named Soap Chairman

Frank Reif, general manager of the soap division of Colgate-Palmolive Co., New York, has ac-



Frank Reif

cepted the chairmanship of the soap division in the 51st Annual Fund Drive of Travelers Aid Society of New York, it was announced recently. Mr. Reif will be one of 225 key New York executives active in the drive to raise \$375,000 to maintain Travelers Aid services in the city's bus, railroad and air terminals, and on the piers.

—★—

### Hooker Plans Merger

The boards of directors of Hooker Electrochemical Co. and Oldbury Electrochemical Co., both of Niagara Falls, N. Y., have approved a formal agreement for consolidation of the two companies subject to approval by the stockholders.

Under the terms of the proposed consolidation, Hooker will be the continuing company. The merger will be effected by the issuance of 45 shares of Hooker common stock for each of the presently outstanding 10,000 shares of Oldbury common stock.

Hooker also announced that quarterly dividends of \$1.0625 per share on the \$4.25 cumulative preferred stock, will be payable Dec. 28, to stockholders of record Dec. 3. Also a dividend of 25 cents per share on common stock was paid on Nov. 26, to shareholders of record Oct. 22.

## New West End Plant

West End Chemical Co., Oakland, Calif., recently announced the construction of a new soda ash plant at Westend, Calif. Present plans call for the new unit to produce in excess of 100,000 tons of sodium sulfate and salt cake in its first year of operation. In celebration of the opening of the plant, West End held open-house for representatives of the pulp, paper and glass industries. Those in attendance included:

James H. Begley, Stauffer Chemical Co., New York; F. T. Bowles, Crown-Zellerbach Corp., San Francisco; R. A. Butler, Crown-Zellerbach Corp.; Elmer Folkestad, Western Kraft Corp. Albany, Ore.; Gordon Gable, Van Waters & Rogers, Inc., Portland Ore.; E. L. Hix, Electro Metallurgical Co., a division of Union Carbide and Carbon Corp., New York; W. C. Jacoby, Crown-Zellerbach Corp.; J. B. Lamb, St. Regis Paper Co., Tacoma, Wash.; Barney Langner, United Can & Glass Co., Haywood, Calif.; George H. MacGregor, Columbia River Paper Mills Vancouver, Wash.; G. E. McElvain, Van Waters & Rogers Co.; James Morgan, Oregon Pulp & Paper Co., Portland, Ore.; R. P. Musson, Northwestern Glass Co., Seattle, Wash.; and George Zeagas, Van Waters & Rogers Co.

—★—

## SAACI Party Dec. 12

The Salesmen's Association of the American Chemical Industry, New York, will hold its annual Christmas Party in the Grand Ballroom of the Waldorf-Astoria Hotel, Dec. 12, it was announced last month by H. D. Watson, chairman of the SAACI entertainment committee.

Last month the association held its annual dinner-dance in the Jade Room of the Waldorf-Astoria Hotel.

—★—

## Monsanto Advances Kelley


Monsanto Chemical Co., St. Louis, recently announced the appointment of James J. Kelley as assistant district sales manager of the firm's New York consumer products division. Mr. Kelley was formerly sales promotion manager for the division. Prior to that he served as sales representative for Detergents, Inc., Columbus, O., in eastern Missouri and southern Illinois.

DECEMBER, 1956

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The 8 products that comprise the Igepal CO series of non-ionic surfactants, while chemically alike, are different in ethylene oxide content, solubility and performance characteristics. They are specifically designed and performance tested for use in technical processes and consumer products requiring a stable non-ionic surfactant.

The correct hydrophobic-hydrophillic balance of any surfactant system is essential to optimum performance. The eight products in the Igepal CO series cover the practical range of hydrophobic-hydrophillic ratios for nonylphenol to ethylene oxide.

Furthermore, being non-ionic, the Igepals are not limited in their use because of undesired reactions with electrolytes and are stable to hydrolysis by acids and alkalis even at elevated temperatures.

To assist you in planning significant experiments in your product or process, the exact composition of the Igepal CO products are described below. Matched sets of samples are available upon request.

$C_9H_{19}$

HYDROPHOBIC

$(OCH_2CH_2)_nOH$

HYDROPHYLIC

WATER SOLUBILITY IS PROPORTIONAL TO  $n^*$

PRODUCT	$n^*$	% ETHYLENE OXIDE	CLOUD POINT, 1% SOLUTION
Igepal CO-210	1½	23	Insoluble in water
Igepal CO-430	4	44	Insoluble in water
Igepal CO-530	6	54	Cloudy at 32° F.
Igepal CO-630	9-10	65	126-133° F.
Igepal CO-710	10-11	68	158-165° F.
Igepal CO-730	15	75	203-212° F.
Igepal CO-850	20	80	Clear at 212° F.
Igepal CO-880	30	86	Clear at 212° F.

\*Moles of ethylene oxide per mole of nonylphenol



## IGEPAL CO

SURFACTANTS ARE USED IN PRODUCTS OR PROCESSES FOR:

To indicate the wide range of performance characteristics available with Igepal CO surfactants, some typical uses are shown for each product:

### IGEPAL CO-210

In high concentrations, serves as defoaming agent in low foaming detergents.

In low concentrations, acts as foam stabilizer for high foaming detergents. Co-emulsifier in non-ionic surfactant blends.

Defoaming agent in cold water cleaners. Oil soluble detergent and dispersing agent for use in petroleum oils.

### IGEPAL CO-430

Oil soluble emulsifying agent. Intermediate in the synthesis of high foaming, water soluble sulfate esters. Oil soluble detergent and dispersing agent for use in petroleum oils.

### IGEPAL CO-530

De-inking of paper. Emulsifier for silicones and agricultural chemicals.

Oil soluble surfactant and emulsifying agent. Detergent and dispersing agent for use in petroleum oils.

### IGEPAL CO-630

Surfactant for use in all phases of textile processing.

Fast rinsing surfactant for cleaning paper machine felts.

Rewetting agent for paper towels and tissues.

Wetting agent in hide soaking and penetrant in fat liquors.

Surfactant for household and industrial cleaning formulations.

Wetting agent for use with mineral acids and corrosion inhibitors.

### IGEPAL CO-710

Can be used interchangeably with Igepal CO-630 in most applications, and

is particularly effective when higher temperatures are employed.

Highly efficient textile detergent in neutral, acid and alkaline media. Surfactant in heavy duty liquid detergent formulations and in controlled suds laundry and household formulations.

### IGEPAL CO-730

Surfactant for high temperature general detergency, and dispersing.

Emulsifying agent for fats, oils and waxes.

Penetrating and wetting agent in caustic solutions.

Surfactant for use with high concentrations of electrolytes.

Wetting agent for use with mineral acids and corrosion inhibitors.

### IGEPAL CO-850

Surfactant for high temperature general detergency and dispersing.

Wetting agent in high concentrations of electrolytes.

Emulsifying agent for fats, oils and waxes.

Stabilizer for synthetic latices.

### IGEPAL CO-880

Detergent for high temperature scouring of textiles in pressure equipment.

Stabilizer for synthetic latices.

Surfactant for high temperature general detergency and dispersing.

Emulsifying agent for fats, oils and waxes.

Wetting agent in high concentrations of electrolytes.

**MANY APPLICATIONS REQUIRE A MIXTURE OF BOTH AN OIL-SOLUBLE AND WATER-SOLUBLE NON-IONIC SURFACTANT. IN SUCH CASES WE SUGGEST THE USE OF AN IGEPAL HAVING A LOW ETHYLENE OXIDE CONTENT IN COMBINATION WITH ONE HAVING A HIGH ETHYLENE OXIDE CONTENT. THIS WILL GIVE IMPROVED EMULSION STABILITY OVER A WIDER TEMPERATURE RANGE.**

For assistance on complex surfactant problems, our technical staff is always available for consultation. Technical literature on the Igepal CO

surfactants will be supplied upon request. Prompt shipments can be made from warehouse stocks maintained at branch offices.

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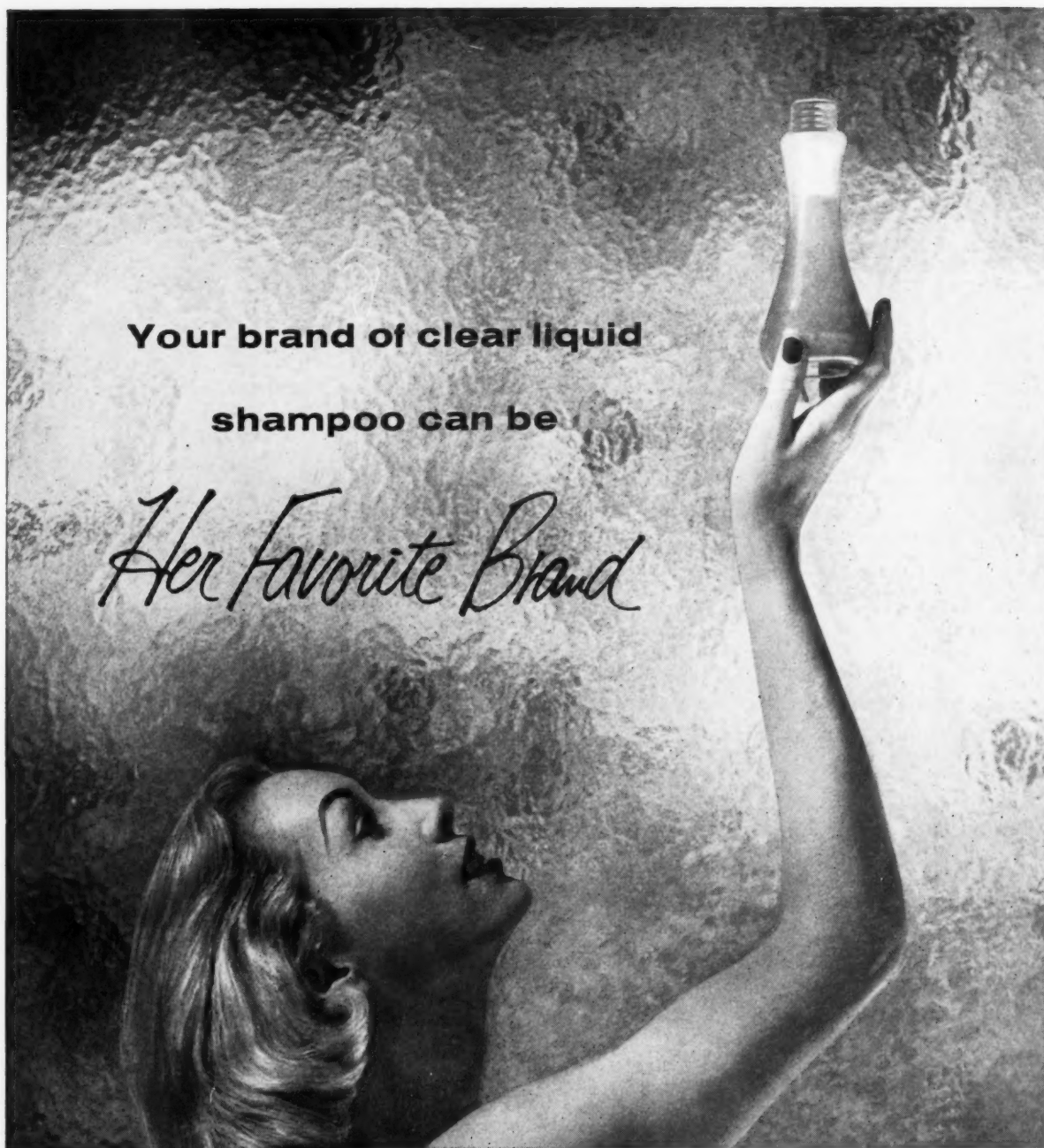
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PETROLEUM

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Use Du Pont *Duponol*\* EP in your formula

**GIVE HER A BEAUTIFUL SHAMPOO**, and that's the one she'll buy. "DUPONOL" EP won't fade or discolor. It keeps its cosmetic elegance on display.

**GIVE HER A BETTER SHAMPOO**, and she'll come back to buy it again. "DUPONOL" EP is laboratory-tested and controlled for quality to give you uniform formulations time after time. What's more, you save time and effort with "DUPONOL" EP. It has greater response . . . requires less thickener . . . keeps its cleansing and foaming action.

**GIVE YOURSELF MORE SALES** by formulating with Du Pont's detergent "DUPONOL" EP. You'll find many advantages; for example, "DUPONOL" EP is the first detergent on the market

to formulate into a wide variety of clear-liquid and liquid-cream shampoos. For more facts, send for our bulletins and formulas. E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Dept., Dyes and Chemicals Division, Wilmington 98, Delaware. We're glad to help.

**DU PONT *Duponol* EP**  
DETERGENT



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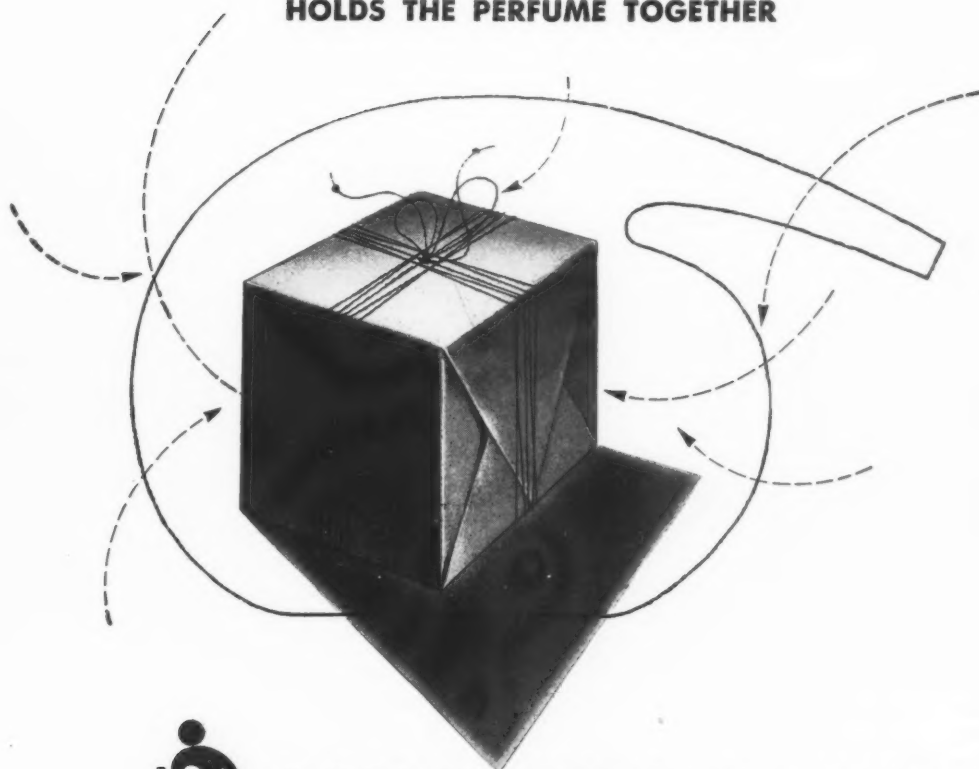
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new  
aromatic chemical  
musk-tonkin type  
lasting, economical**

Useful addition to present standard fixatives

Does not discolor perfumes, creams, soaps, and  
other cosmetic preparations

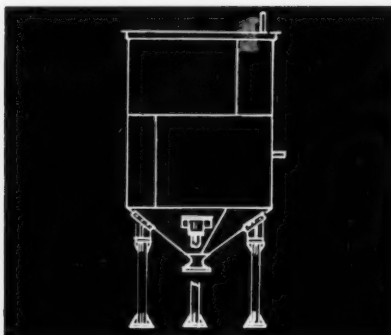
*Like a string around a package, it...*

**HOLDS THE PERFUME TOGETHER**

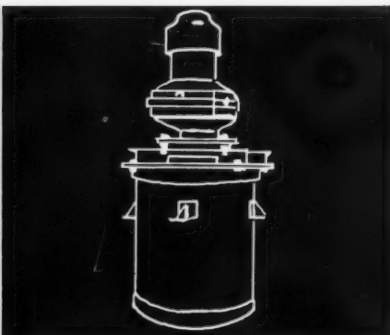


**Polak's Frutal Works, Inc.,** Middletown, New York

\*Domestic and Foreign Patents applied for.



KETTLES



CRUTCHERS



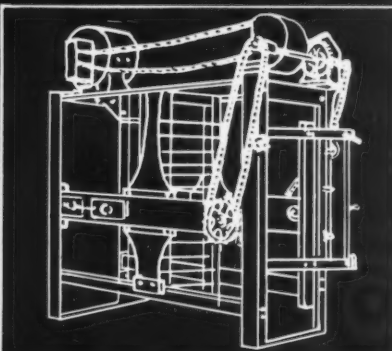
AMALGAMATORS

## *Making Good Soap* **BETTER,** *for over 115 Years*

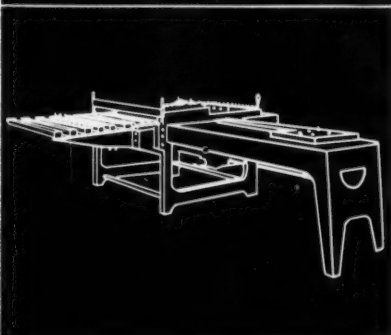
Houchin started producing soap making machines over 115 years ago.

Practically all basic soap making machinery today is derived from original Houchin inventions.

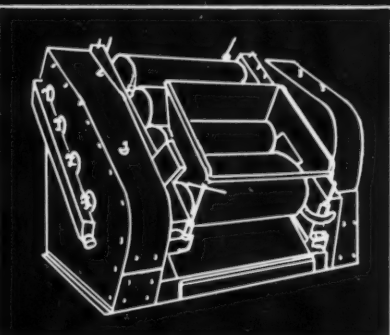
Look to Houchin for further revolutionary improvements.



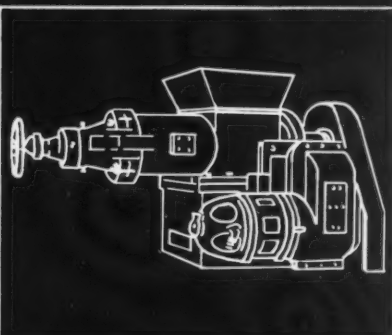
SLABBERS



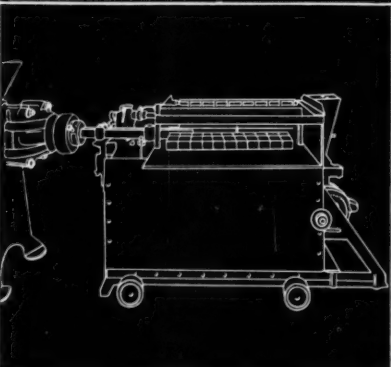
LAUNDRY SOAP CUTTERS



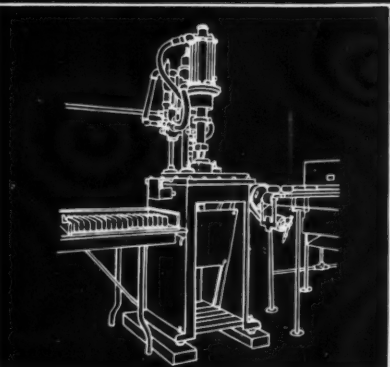
MILLS WITH GRANITE OR CHILLED  
IRON ROLLS



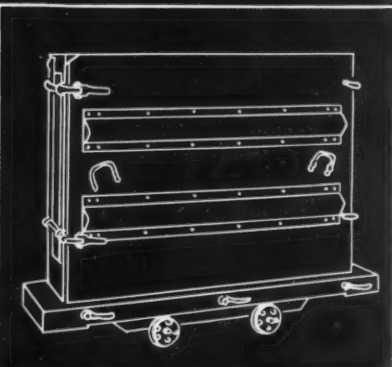
PLODDERS



TOILET SOAP CUTTERS



PRESSES—FOOT OR AIR OPERATED



SOAP FRAMES

**HOUCHIN MACHINERY CO., INC.** HAWTHORNE,  
NEW JERSEY, U.S.A.



## Packaging at Hollingshead

**I**N addition to numerous chemical specialties packed under its own "Whiz" label, R. M. Hollingshead Corp., Camden, N. J., has a large and expanding private label business. A variety of products packaged in various sizes and types of containers makes for a complicated packaging operation requiring the most versatile of packaging equipment. At its Camden, N. J. plant, Hollingshead now has 22 packaging lines—12 for liquids and 10 for dry and paste products.

In its liquid filling department Hollingshead is packaging over 200 different products using "F" type cans, sanitary cans, cone top cans and bottles, in sizes ranging from a four ounce sanitary can to a one gallon "F" style can. In this department, 29 percent of all filling is done on three lines. Other lines are for very viscous liquids, or as standby lines ready to use in case of stoppage on the operating lines, or to take over a run to permit cleaning of the first line for a new product, or for changeover to another size container. In order to reduce down-time to a minimum, packaging runs are planned so that they will average one container size change and two product changes a day. Complete change-over of an entire line for a new container and product usually takes about one-half hour.

The three lines used for 20 percent of its liquid packaging handle 32 products filled into eight sizes of containers of four different types. These lines are equipped with a filler, screw capper and case sealer. There is also a mobile can seamer that replaces the capper on two of the lines when sanitary cans are being filled.

**A variety of products requiring containers of a wide range of sizes and types makes for a complicated packaging operation; one that requires versatile packaging equipment**

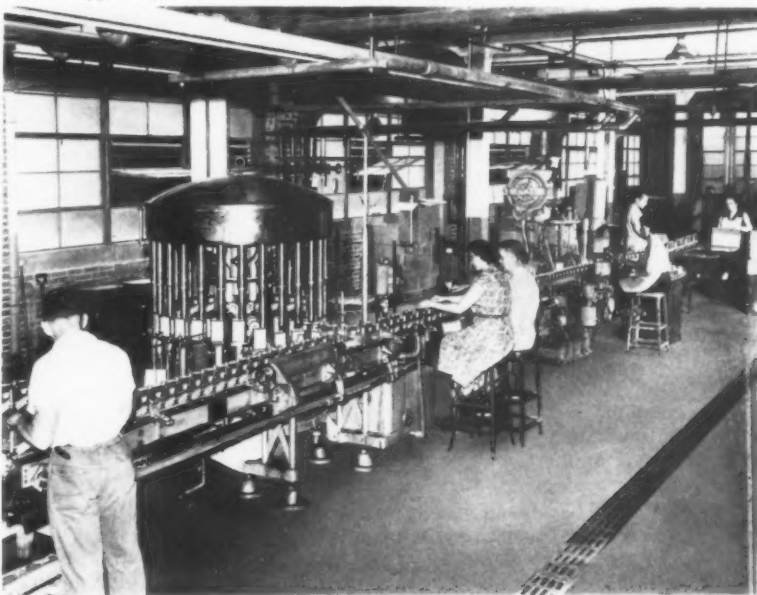
When lithographed cans are used (made in Hollingshead's own can plant), and color applied labels are used for the bottles, no labeling machinery is required. When glued labeling is required, portable labelers are positioned in the line. See photos for individual lines.

Robert Hurd, superintendent of the Camden plant, points out that many of his packaging lines are not operated at top capacity. He says, "We feel that buying equipment capable of higher speeds than our actual production requires is good preventive main-

tenance. Any machine run at top speed day in and day out is bound to wear and require a lot more attention than the machine operated at a speed below its rated capacity.

Today's operation at Hollingshead, photographs of which appear on this and subsequent pages, is a far cry from the early days of the firm. The company had its origin in 1888, when R. M. Hollingshead, Sr., founder, formulated batches of black harness dressing himself. He made the stuff on a kitchen stove in Camden and

On line No. 1 at Hollingshead such chemical specialties as brake fluid, cleaning fluid, brush cleaner, auto polishes, fabric cleaner, scot burner, gasoline additive and upper cylinder lube are filled. Container sizes and styles include: eight, 16 and 32 ounces; "F" style cans, eight ounce sanitary can and 12 ounce cone top. Sixty to 120 containers are filled per minute. Equipment used includes Horix 26 valve filler (left); Pneumatic Scale capper (right) and Standard Knapp case sealer.



# Continuous Soap Plants



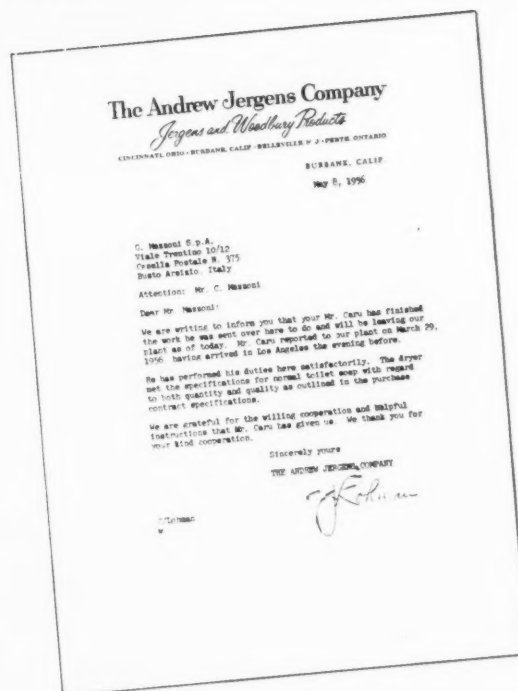
Photograph of a MAZZONI soap plant automatically producing one ton of household or toilet soap per hour. "S" is the silo for the storage of the dried soap rods. From the silo the rods are then passed through a line of finishing machinery for milled soap cakes.

★ The Vacuum Process, over all other old and new cooling methods, enables you to make use of the water at the temperature available at any factory as it is possible to cool the soap at such a temperature because of the vacuum and the peculiar devices provided — without resorting to expensive cooling equipment—so that its consistency is satisfactory no matter what the cooling water temperature is.

★ Our manufacturing range also includes: plants for continuously sulphonating and spray-drying synthetic detergents in the form of hollow beads—continuous fat splitting and fatty acid saponification plants — continuous glycerine recovery and refining plants.

## Advantages of the MAZZONI Process:

- ★ Small plant space; only one operator needed.
- ★ Saves 70% in steam, 50% labor, 40% electric power.
- ★ Operates at low temperatures, avoiding deterioration of soap.
- ★ Vacuum process gives better toilet soaps. Deodorizing effect reduces perfume needs. Smoother, grit-free cakes which wash off evenly. Improved lathering.
- ★ Transparent toilet and laundry soaps without addition of glycerine, alcohol, sugar, and any other additives.
- ★ Complete installations (mixers, mills, plodders, cutters and stampers) for milled toilet soap and soap flakes.
- ★ Since 1945 more than 130 plants have been installed in different countries of the world.
- ★ Laundry soaps, pure from 62% fatty acids upwards or filled from 35 to 62% fatty acids, ready for pressing and immediate packing without slabbing, cutting, etc. Automatic perfuming device included.
- ★ Suitable for adaptation in any soap factory, — a compact, low-cost vacuum process, continuous from neat soap to pressing and wrapping.
- ★ Soaps showing a beta phase content from a minimum of 75 percent to a maximum of 100 percent. Analyzed in the laboratories of Procter & Gamble Company, Cincinnati. Analysis is given with their permission.
- ★ Plants for outputs of one-quarter-ton, half-ton, one ton, two tons, three tons or higher per hour.



For further detailed information, write to  
**G. MAZZONI, S. p. A.**  
 Busto Arsizio, (Varese) Italy  
 Cable address: Cosmazzoni, Busto Arsizio

personally sold it to the carriage trade of the day. This was the modest beginning of more than 65 years of notable contributions in the research and manufacture of products for automobile, aircraft, industry, national defense and home.

Within a few years, the founder's business had grown, forcing him to move into what he called his first plant, a stable in the rear of his home. In 1890 he established the business as the R. M. Hollingshead Company and, seven years later, chartered it under that name.

Starting with a single product the company soon expanded its line to several products for the carriage trade, including top dressings, polishes and greases. By the turn of the century the company had outgrown the family stable and in 1900 built its first factory. The new factory was almost entirely self-sufficient from the start, even to producing and lithographing its containers and tin cans, which remains to this day an important division of the company. This also led to the manufacture of lithographed metal toys, which the company still produces and sells.

Line No. 3, which operates at an average speed of 22 cans per minute, fills one gallon "F" style containers only. Products filled include: auto polishes, brake fluids, glass cleaners, hydraulic oils, liquid soap, liquid waxes, rifle bore cleaner, rubber lubricant, white side wall cleaner, fire extinguisher fluid, shock absorber fluid and degreasing compound. Equipment includes: Horix 20 valve filler, Elgin single spindle capper and Standard Knapp case sealer.



On Line No. 2 at Hollingshead such chemical specialties as floor waxes, pressure testing soap, radiator rust resistor, concentrated car wash and upper cylinder lube are filled. Containers used include eight, 16 and 32 ounce cans, "F" style cans, 16 ounce round bottles and four ounce sanitary cans. Filling speed range is 32 quart "F" style cans to 120 four ounce sanitary cans per minute. Equipment used: Horix 18 valve filler, Consolidated capper, Canco 400 can seamer and Standard Knapp case sealer.

By 1909, the automobile industry was beginning to show both progress and promise, and the company added to its products a new line of top dressings, polishes and greases especially designed for this new mode of transportation.

In 1918, the company en-

tered the manufacture of products for general industry and the home.

In 1926 the company established its own export department. Sales to foreign countries began to contribute substantially to the company's total volume. Today, Hollingshead products are distributed in practically every foreign country.

In 1927, the company opened a subsidiary in Bowmanville, Ontario, Canada. This plant manufactures for Canadian consumption many of the same items produced in the United States, and has become an increasingly important factor in Hollingshead's distribution picture.

Expanded sales in Canada have required several substantial additions to the original Canadian plant, culminating in 1952 in construction that doubled the original size of the plant.

The corporation's current plans look to still further development to keep pace with Canada's rapidly growing economy. These plans are reflected not only in additional plant expansion, but in establishing private label operations (products made by Hollingshead to be marketed by other com-





JOHNSON'S WAX gets a quick, thorough mixing with these 3-horsepower propeller-type LIGHTNIN Mixers, before going into the familiar bright-hued cans.

Photo courtesy S. C. Johnson & Son, Inc., Racine, Wisconsin

## How Johnson protects uniformity of finished waxes

How important is *uniformity* in keeping your product competitive?

At S. C. Johnson & Son, Inc., the entire organization from top management down gives first priority to the job of maintaining the never-varying quality of Johnson's Waxes.

Typical of Johnson's careful control measures is this final-mix operation. Just ahead of the filling machine line, finished products go into these holding tanks. Before packaging begins, LIGHTNIN Mixers rapidly bring the products to full uniformity.

Dual propellers on each LIGHTNIN Mixer create a strong, steady flow, sweeping the tank bottom and creating rapid top-to-bottom turnover plus rotation of the batch, for complete uniformity in shortest possible time.

### 10-minute mix

So thorough is this mixing action, that on many products only 10 minutes' mixing time is required prior to feeding to filling machine.

S. C. Johnson & Son, Inc. has used LIGHTNIN Mixers for many years, and

employs more than 40 LIGHTNINS in this type of service alone.

You get closest possible control of product quality and uniformity when you mix with LIGHTNIN Mixers. Every LIGHTNIN is scientifically selected for you, to deliver the exact mixing action you need, most economically. Mixing results are unconditionally guaranteed.

For fast, competent help on any fluid mixing problem, just call your LIGHTNIN Mixer representative, listed in Chemical Engineering Catalog and in Thomas' Register. Or write us direct.

**MAKE ANY OPEN TANK** an efficient mixing vessel, with a LIGHTNIN Portable Mixer. Thirty portable models; gear drive, direct drive; sizes 1/4 to 3 HP. Other LIGHTNINs to 500 HP.

## Lightnin® Mixers

MIXCO fluid mixing specialists

FOR LATEST MIXING INFORMATION and full description of LIGHTNIN Mixers, send for these helpful bulletins:

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> B-102 Top or bottom entering; turbine, paddle, and propeller types: 1 to 500 HP | <input type="checkbox"/> B-104 Side entering: 1 to 25 HP                   | <input type="checkbox"/> B-111 Quick-change rotating mechanical seals for pressure and vacuum mixing |
| <input type="checkbox"/> B-103 Top entering; propeller types: 1/4 to 3 HP                                | <input type="checkbox"/> B-112 Laboratory and small-batch production types | <input type="checkbox"/> B-107 Data sheet for determining mixer requirements                         |
| <input type="checkbox"/> B-108 Portable: 1/4 to 3 HP   | <input type="checkbox"/> B-109 Condensed catalog showing all types         |  |

Check, clip, and mail with your name, title, company address to:

**MIXING EQUIPMENT Co., Inc., 167-n Mt. Read Blvd., Rochester 11, N.Y.**

In Canada: Greey Mixing Equipment, Ltd., Toronto 10, Ont.





panies under their own brand name), creating industrial and government sales operations, and a newly selected management "team" aimed at a progressive decentralization of the Canadian management.

In 1955 Hollingshead expanded its activities on the West Coast by completing construction of a new manufacturing plant in Sunnyvale, Calif. The factory is the most modern of its kind, embodying the latest thinking, employing the latest techniques, and equipped with the latest devices for fast, economical production of chemicals.

Among the firm's newer products are "H-2," non-inflammable hydraulic fluid. Conforming to the Navy specification covering this type of material, it is now required on a majority of Navy aircraft.

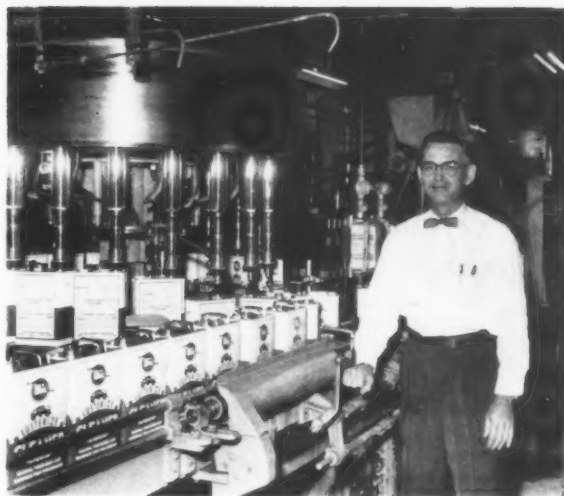
The company, incidentally, claims to have developed the first non-evaporating brake fluid, which was patented in 1935. This was an important factor in promoting and popularizing the use of hydraulic brake systems.

By 1941, a diversified number of products and materials were being developed and manufactured for the Armed Services. Products for the military have become a significant addition to Hollingshead research and manufacturing. During World War II, the company cooperated with the Department of Defense in producing hydraulic fluids, corrosion and rust preventive compounds, cleaning compounds, paint strippers, stripable and sprayable plastic compounds. The latter product, now known as "Cocoon," is almost universally used for "mothball" storage of airplanes, naval vessels, tanks, military vehicles of all kinds, and other vital equipment.

#### New Colloid Mill

A new two-stage colloid mill, designed for processing soaps, hand creams, disinfectants, wax emulsions and other specialties, has been developed by Manton-Gaulin Mfg.

Robert Hurd, superintendent of all packaging operations for R. M. Hollingshead Corp., Camden, N. J., stands by one of firm's high speed filling lines in Camden plant.



Co., Everett, Mass., it was announced recently.

The mill, called "Gaulin RE," features a removable rotor, stator, and rotary shaft seal which are claimed to simplify operating, speed changeover, cleaning and eliminate shaft leakage. Accessory equipment, used for processing small amounts of material, includes a three-way valve, by-pass tubing, and tank, all of stainless steel. Further information, in the form of technical bulletin C-56, can be obtained from the company, 41 Garden St., Everett 49, Mass.

#### New Federal Bulletin

A new folder, listing and describing its line of paints and maintenance products, has been issued by Federal Varnish Division, Chicago, it was announced recently by G. J. Flanagan, sales manager. The folder, which also contains distributor and suggested retail price lists of the products, can be obtained from Federal Varnish, 2811 South Ashland Ave., Chicago 8.

#### FMC Caustic Handling Chart

Food Machinery and Chemical Corp. recently announced availability of its caustic soda handling chart to anyone sending a letterhead request to its sales promotion and publicity office at 161 East 42nd Street, New York 17. Previously, distribution of the chart had been exclusively through the

sales force of FMC's Westvaco Chlor Alkali Division.

About 20 by 16 inches in size, the wall-hanging chart includes information on the safe handling of caustic soda, personal protective equipment, and first aid treatment.

#### New Phila. Quartz Folder

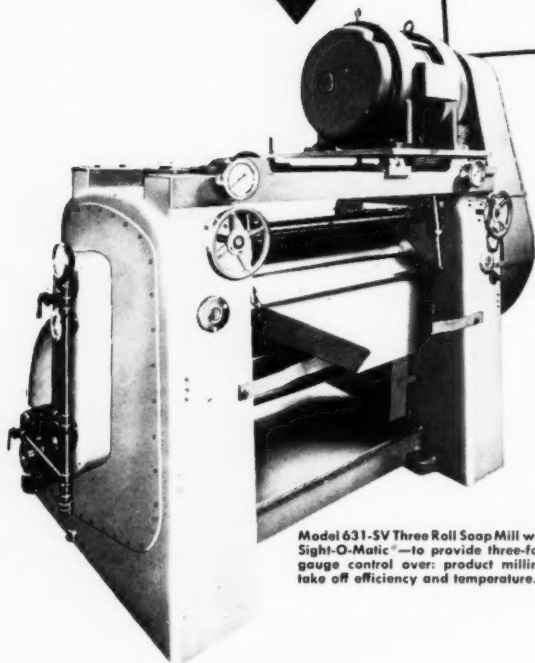
Suggested uses and applications of sodium orthosilicate are discussed in a new folder recently issued by Philadelphia Quartz Co., 1156 Ledger Building, Philadelphia 6. Entitled "Heavy Duty Industrial Cleaner," the folder lists physical and chemical properties and describes the chemical's role in neutralizing acidic materials while maintaining a high degree of alkalinity. Copies are available on request.

#### New Globe Sequestrant

A new organic, high molecular weight, polyhydroxy compound, designed for use as a water-softener, solubilizer, sequestering agent and stabilizer in soaps, detergents and cleaners, has been developed by Globe Compound Co., Waterbury, Conn. Called "Monitor A," the product is completely miscible with water, lower alcohols, polar organic solvents and aqueous solutions of water miscible solvents. Further information and samples can be obtained from the company, Waterbury-Bristol Rd., Waterbury 12, Conn.

# LEHMANN MACHINES

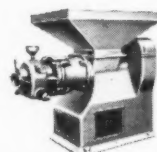
... Engineered to  
**YOUR**  
Soap Finishing Needs  
**PRESENT and FUTURE**



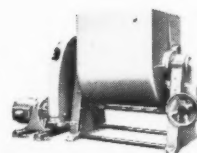
Model 631-SV Three Roll Soap Mill with Sight-O-Matic™—to provide three-fold gauge control over: product milling, take off efficiency and temperature.



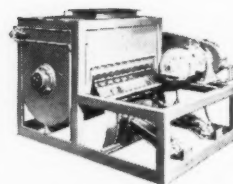
Model 310-P Preliminary Plodder



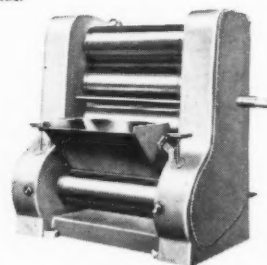
Model 310-F Finishing Plodder



Model 40 G-Y Tilted Type Amalgamator



Model 40 G-B Bottom Dump Amalgamator



Model 912-SA Five Roll Finishing Mill

LEHMANN is constantly aware of, and responsive to, the mechanical problems involved in processing soaps—to past standard formulations and the newer detergent types. We have designed machines to meet the changing needs of the Industry. Our engineers cooperate closely with soap producers to assure that user requirements are reflected in every detail of construction.

Whether you are looking to improve returns from present operations or gear your production to meet the demands of changing requirements, let Lehmann work with you toward a solution. Make use of Lehmann test facilities and engineering service on any of your processing machine problems . . . whether they involve new or old formulations.

Lehmann tailors special machinery to suit particular needs. Our standard models . . . some of which are shown . . . are only indicative of the type of equipment and service which Lehmann can supply. If you are not ready for new equipment, ask us about Lehmann Certified Factory Reconditioning for the machines you are now using.

\*Reg. U. S. Pat. Off.



## J. M. LEHMANN COMPANY, Inc.

COAST-TO-COAST SERVICE

Moore Dry Dock Company  
Oakland, California

Lammert & Mann Co.  
Chicago 12, Illinois

J. M. Lehmann Co., Inc.  
Lyndhurst, New Jersey

# Book Reviews

## New Detergent Bulletin

"Recommendations for the Use of Detergents in the Dairying Industry" are discussed in a new bulletin recently published by the British Standards Institution, London. The bulletin also provides complete information on detergents used in cleaning milking equipment and lists detergents utilized in various other phases of the industry. In addition, specific cleaning operations at the dairy farm and at the processing dairy are described in detail. Copies of the bulletin can be obtained for 6sh from the institution, British Standards House, 2 Park Street, London, W. 1.

—★—

## Toxicology of Pesticides

"Clinical Memoranda on Economic Poisons," 1956 revision, published by the technical development laboratory, Communicable Disease Center, U.S. Public Health Service, Atlanta, Ga. Like one of its predecessors in 1954, the current edition has been reproduced and is being distributed as a public service by the National Pest Control Association, New York, in the form of a paperbound 78-page booklet.

Information on the toxicology of pesticides published in these memoranda is based on research conducted by the laboratories of the Communicable Disease Center, on clinical and field studies by the Center, and on data originating from other sources. The memoranda are prepared primarily for the guidance of physicians in the diagnosis and treatment of persons who may have been exposed to pesticides, orally and externally, acutely or chronically.

Materials covered for the first time in the 1956 revision include allethrin, "Dipterex," chlorthion, "Diazinon," heptachlor, malathion, methoxychlor, "Perthane," pival, and pyrethrum. The information has been grouped under headings such as organic phosphate insecti-

cides, chlorinated hydrocarbon insecticides, and rodenticides.

A brief portion of each memorandum is devoted to a description of the chemical nature, formulations, and uses of the compound under consideration. This is intended to guide the attending physician in questioning the patient on his exposure to economic poisons or their solvents. The remainder of each memorandum is devoted to

medical considerations, including mode of action, diagnosis, and treatment.

Although intended for the medical man, these memoranda should interest anyone associated with the manufacture or application of pesticidal materials.

—★—

## Lever Advances Robinson

Dennis J. Robinson has been named sales manager of Lever Brothers Co., New York, southern district, it was announced recently. In his new post, Mr. Robinson will handle sales in six territories.

## WANT STEEL PAILS AND DRUMS NOW VULCAN SHIPS IMMEDIATELY



### These Sizes Steel Pails and Drums Available

1-1½-2-2½-3-3½  
4-5-6-6½-7-8-9  
10-12 and 15  
gallons

Whether you order a carton, truckload, carload or mixed combinations in the sizes shown, you can depend on Vulcan to ship promptly.

Many buyers find Vulcan's prompt delivery helps them keep container inventories at a minimum . . . no need to keep big stocks of containers on hand to meet production schedules. They order containers when needed . . . in any quantity. Vulcan gets them there in time!

Vulcan's tremendous warehouse stock in all styles and sizes steel pails and drums makes this possible . . . for Vulcan's sole interest is in manufacturing the finest in steel containers.

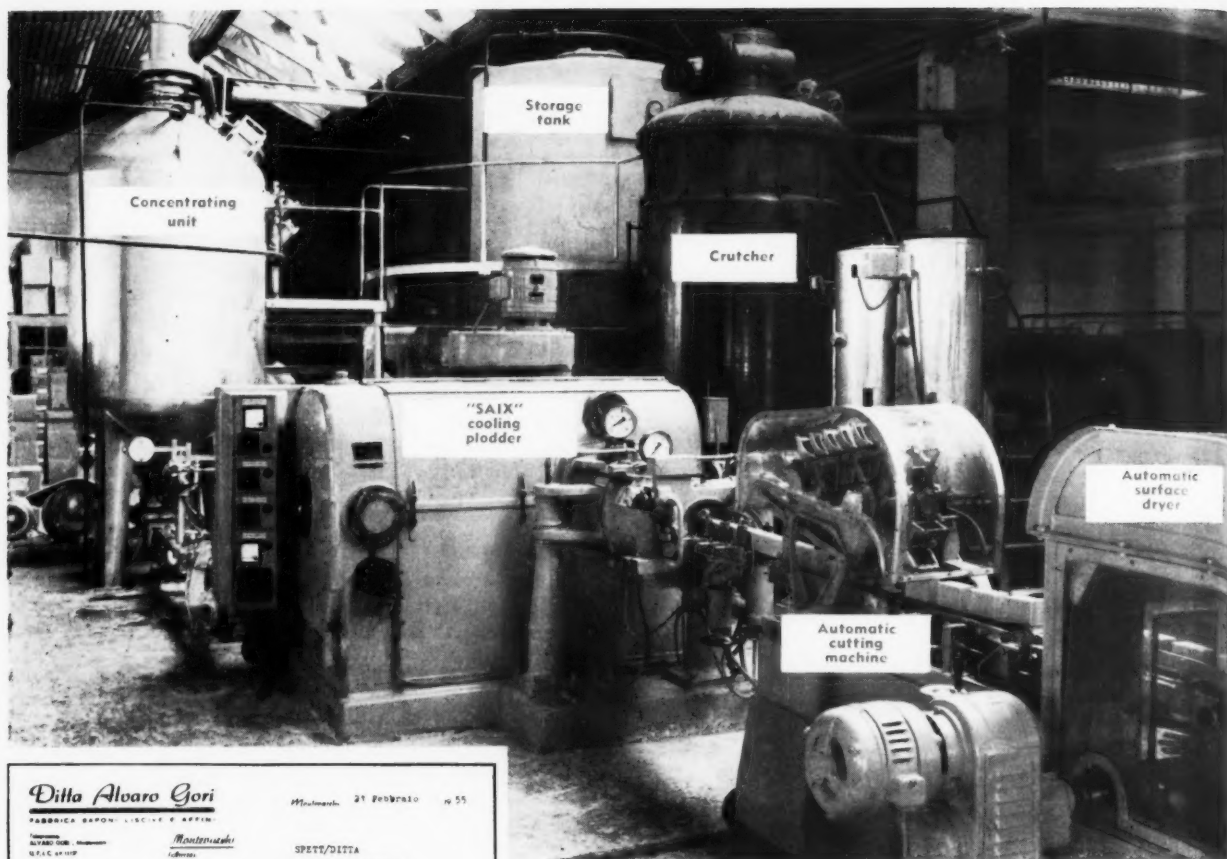
Vulcan's complete selection of all types nozzles and pouring spouts plus protective interior linings . . . wide choice of container colors . . . expert label design and lithographing facilities makes Vulcan your best source of supply.

So check Vulcan on your next container order. It could pay you in time and money saved!

over 40 years container experience

## VULCAN CONTAINERS, INC.

Bellwood, Illinois (Chicago Suburb) Phone: Linden 4-5000  
In Toronto, Canada—Vulcan Containers Limited.  
Representatives in all Principal Cities



**Ditta Alvaro Gori**  
FABBRICA SAPONI LIQUIDI E SOLIDI

21 Febbraio 1955

Spett.le Ditta  
MECCANICHE MODERNE  
C.so Sempione, 51  
(Varese)

**MISTO ARSIZIO**

In seguito a Vo. richiesta siamo lieti di comunicarVi che il Vo. impianto "SAIX" funziona dal mese di agosto 1954 producendo sapone puro al 62-63%, sapone secco trasparente al 72% ed anche tutti gli altri saponi previsti con Vo. garanzia. La produzione oraria dell'impianto corrisponde perfettamente a quella da Voi garantita ed il funzionamento dell'impianto è ineccepibile.

Siamo a Vo. disposizione per fare visitare l'impianto in funzione e confermare al Vo. clienti in ogni soddisfazione. Grazie cordiali saluti.

Alvaro Gori  
Ditta Alvaro Gori

Photograph of a "SAIX" plant capable of producing automatically one ton of household soap per hour.

## "SAIX" TYPE AUTOMATIC COOLING PLODDER — MOST UP-TO-DATE PLANT FOR THE CONTINUOUS FINISHING OF SOAPS

"SAIX" cooling plodder performs six otherwise separate operations: it chills, homogenizes, controls internal texture of the soap, perfumes, gives translucency if required, and extrudes the soap as a continuous bar of any desired size.

"SAIX" performs these six steps under air tight conditions.

"SAIX" Versatility: Fats of high or low titer and containing high or low moisture content are processed rapidly and efficiently into good quality soaps:

- pure 62-63% T.F.M. soaps containing 28% moisture
- filled soaps (100% sodium silicate, bentonite — soda ash, etc.) down to 35% T.F.M.
- soaps made with 100% coconut oil
- soaps, pure or filled, up to 72-73% T.F.M.
- high rosin content soaps up to 25-30% of rosin fatty acids
- toilet soaps
- transparent soaps, without the addition of sugar, soda ash, glycerine, etc.
- medicinal soaps (carbolic soap, phenol soap, etc.)
- industrial soaps
- soaps made with olive oil fats, etc.

Main advantages over competitive plants on the market: When using the "SAIX" cooling plodder soap need not be dried in order to effect cooling by water evaporation, resulting in the following economies from the use of "SAIX" equipment:

- 100% savings on steam, 50% on cooling water, 50% on electrical power, 70% on labor
- "SAIX" produces soaps crystallized up to 100% in "beta" phase
- Warm water up to (+28° C) can be used to cool the soap, always getting a firm bar
- Production capacity: "SAIX" is manufactured for the following capacities: 0.1, 0.25, 0.5, 1, 2, 3 and more tons per hour
- "SAIX" can be run by an unskilled operator
- "SAIX" can extrude soaps containing from 35% up to 74% fatty acids which can be cut, stamped and packaged immediately without scraps
- "SAIX" refines and homogenizes the texture of soap getting a finished bar free from end markings and stripes
- Transparent soaps produced by a "SAIX" require no further milling and plodding for uniform texture and transparency
- Complete guarantee is given that there are abso-

lutely no changes in fatty acids and moisture percentages between the liquid soap fed into the "SAIX" and the resulting bar soap.

- "SAIX" units can be supplied alone or complete with additional equipment: concentrating unit, automatic cutting machine, automatic tunnel, automatic stamping machine, storage tank, soap crutcher
- "SAIX" extrudes soap without any worm to force the soap in the compression cone: these worms require the use of high melting point fats and reduce the natural moisture content of the soap
- "SAIX" extrudes firmer bars which retain their shape in storage
- "SAIX" allows maximum economy in space
- MECCANICHE MODERNE also makes of: complete plants for toilet and chip soaps, chipping machine, chilling rolls, soap driers, soap conveyors, silos, soap weighing machine, stamping machines, toilet soap pilot plants, plate and frame cooling press
- Continuous automatic sulfonating plants, "SULFAN" type from 0.1 to 5 tons per hour and more capacity, spray driers for soap and detergents to produce hollow beads or fine powders from 0.25 up to 5 tons per hour capacity.



# MECCANICHE MODERNE

CORSO SEMPIONE, 51

BUSTO ARSIZIO (ITALY)

U. S. SALES REPRESENTATIVE  
**AMERICAN ASSOCIATION**  
507 Fifth Ave. N. Y.

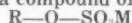


# NEW Patents

The data listed below is only a brief review of recent patents pertinent to the readers and subscribers of this publication. Complete copies may be obtained by writing to the publisher of this magazine, MacNair-Dorland Co., 254 W. 31st Street, New York, 1. N. Y., and remitting 50c for each copy desired. For orders received from outside of the United States the cost will be \$1.00 per copy.

**No. 2,765,279. Shaped Mixture of Soap and Phosphonate**, patented by Joseph Nüsslein, Frankfurt am Main, Germany, assignor to Metallgesellschaft, Aktiengesellschaft Frankfurt am Main, Germany. The patent covers a shaped washing and cleansing agent pressed in the form of a bar consisting essentially of a mixture of about 80 per cent of oleic acid and fatty acids from coconut oil and lard and about 20% of stearyl amino phenyl phosphonic acid, said mixture neutralized with an alkali metal hydroxide.

**No. 2,765,280. Stabilized Detergent Composition**, patented by Harry Howard Reynolds, Penns Grove, N. J., and Oliver Yeaton, Cranston, R. I., assignors to E. I. du Pont de Nemours & Co., Wilmington, Del. Described is an aqueous detergent composition comprising a principal ingredient and a color stabilizer, the principal ingredient being a compound of the formula



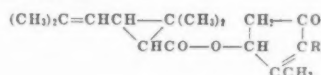
wherein M is a water-solubilizing cation, while R—O—is an alcoholic radical of the group consisting of normal aliphatic alcohols of 10 to 20 C-atoms and the condensation products of such alcohols with not more than 10 units of ethylene oxide, and the color stabilizer being a member of the group consisting of citric acid and water-soluble, colorless citrates, the concentration of said principal ingredient being from 6% to 35% by weight of the entire composition, and the concentration of said color stabilizer being from 0.1 to 3% on the same basis, said composition containing further metallic ions of the group consisting of iron and zinc to a concentration of not less than 0.0005% and not more than 0.01% by weight, and being characterized by stability against development of objectionable colors upon storage.

**No. 2,767,146. Method of Making Cleaning Composition**, patented by Paul W. Bonewitz, Elmer H. Fults, and George S. Edwards, Burlington, Ia., and Sebern W. Hockett, deceased, by Esther D. Hockett, administratrix, Mount Pleasant, Ia., assignors to Bonewitz Chemicals, Inc., Burlington.

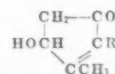
This patent teaches a method of making reaction products of aqueous gluconic acid solution and sodium hydroxide in particle form, which comprises spraying 4% by weight of the gluconic acid solution, based on the weight of the sodium hydroxide, upon particles of the sodium hydroxide and rapidly dissipating the heat of reaction, the concentration of the aqueous gluconic acid solution being 50%.

**No. 2,767,437. Method of Amalgamating and Extruding Soap**, patented by Donald E. Marshall, Edina, Minn. The patent teaches a process of amalgamating and extruding deformable solid soap having a viscosity as high as 2000 on an arbitrary viscosity scale on which the viscosity of conventional roller-milled soap measures about 100 and that of conventional floating soap about 75, without entailing an objectionable temperature rise in the material, which process comprises: force feeding the soap in its solid state into a feed chamber, rotating meshing helical gears having elongated teeth in a close fitting chamber which opens to the feed chamber, in directions such that the pockets defined by the spaces between gear teeth continually enter the feed chamber and move from the feed chamber along the wall of the close fitting chamber to a high pressure amalgamating chamber; by the forced feeding of the soap into the feed chamber charging quantities of the soap into the pockets defined by the spaces between gear teeth; by the rotation of the gear transferring the soap in said pockets to the high pressure amalgamating chamber; by the progressive entry of the helical teeth of one gear into the helical tooth spaces of the gear meshing therewith forcibly displacing the soap from each pocket progressively from one end thereof toward the other as said pockets pass through the high pressure amalgamating chamber to thereby fill said chamber and effect amalgamation of the soap therein; by the forced progressive displacement of the soap from the pockets into the filled high pressure amalgamating chamber forcing the soap from said chamber through an extrusion passage of such proportions that the line loss thereof develops a pressure in the amalgamating chamber of at least 1000 pounds per square inch; and abstracting the heat developed in the soap during its amalgamation and extrusion to hold the temperature thereof to below 140° F.

**No. 2,768,965. Allethrin and Related Insecticides**, patented by Harry A. Stansbury, Jr., and Howard R. Guest, South Charleston, W. Va., assignors to Union Carbide and Carbon Corp., New York. A process is revealed for making an ester of the general formula



wherein R is an unsaturated group containing from three to seven carbon atoms and free of elements other than carbon, hydrogen and oxygen which comprises forming a mixture of chrysanthemum monocarboxylic acid anhydride and an alcohol of the general formula

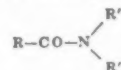


wherein R is as set forth above, and heating said mixture to a temperature between 50° C. and 200° C. whereby said anhydride reacts with said alcohol to form said ester.

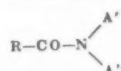
**No. 2,768,927. Method of Killing Insects with Alkyl Phenylsuccinimides and Fabric Impregnated Therewith**, patented by Samuel J. Ringel and Louis Feinstein, Washington, D. C., dedicated to the free use of the People of the United States. Revealed is the method of killing insects which comprises exposing them to contact with an N-alkyl-alpha-phenylsuccinimide in which the alkyl group contains from 1 to 5 carbon atoms.

Also described is the method of killing human body lice which comprises impregnating a fabric with a solution of a compound selected from the group consisting of N-methyl-alpha-phenylsuccinimide and N-ethyl-alpha-phenylsuccinimide, and exposing said lice to contact with the impregnated fabric.

**No. 2,768,957. Detergent Purification**, patented by Vincent A. Sullivan, Jr., Lyons, and Zdzislaw Joseph Ptasiński, Chicago, Ill., assignors to The Stepan Chemical Co., Chicago, Ill. A method is revealed of treating a composition comprising essentially water-soluble alkyl aryl anionic sulfonated detergent having a long aliphatic chain of 8 to 22 carbon atoms, and 1 to 20 weight percent thereof of alkali metal sulfate salt, that comprises intimately admixing the composition with substantially an equal weight of ethanol and water in volume ratio of 59:41 and with 5-50 weight percent of amide derivative selected from the group consisting of (1) dialkylolamide having the formula:

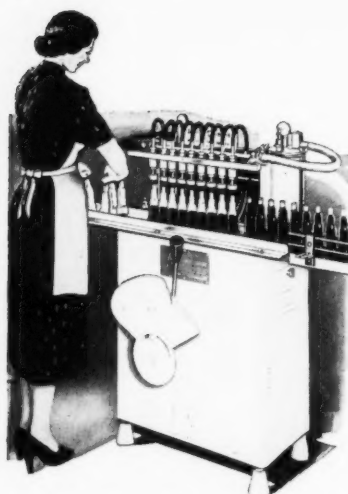


wherein R—CO is a fatty acyl radical of 10 to 14 carbon atoms, and R' and R'' are hydroxyalkyl groups of up to 5 carbon atoms each; and (2) polyalkoxyalkylolamide condensate of 2 to 5 mols of alkylene oxide having 2 to 3 carbon atoms with 1 mol of higher fatty acid amide having the formula:



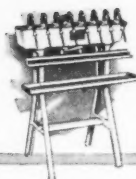
wherein R—CO— is a fatty acyl radical of 10 to 14 carbon atoms, A' and A'' are each selected from the group consisting of H and hydroxyalkyl radicals of up to 5 carbon atoms each and each having 1 to 2 hydroxy groups with none of the carbon atoms having more than one

(Turn to Page 217)



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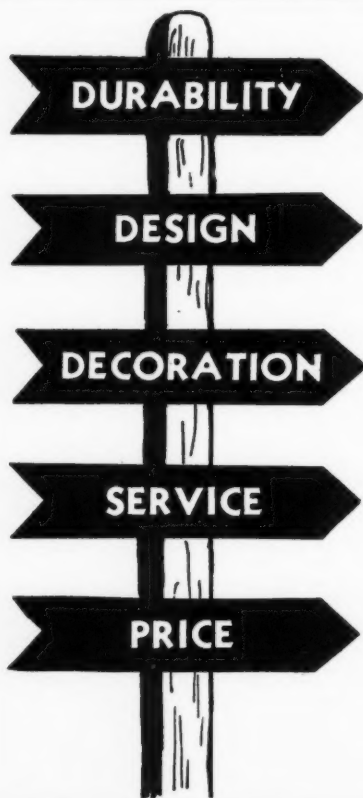
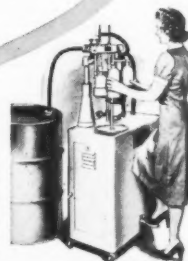
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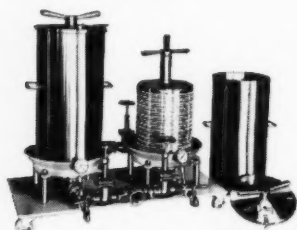
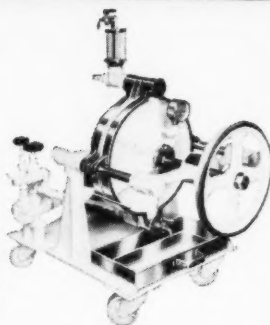


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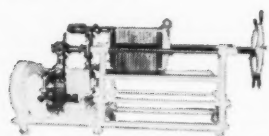
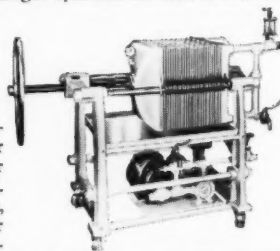


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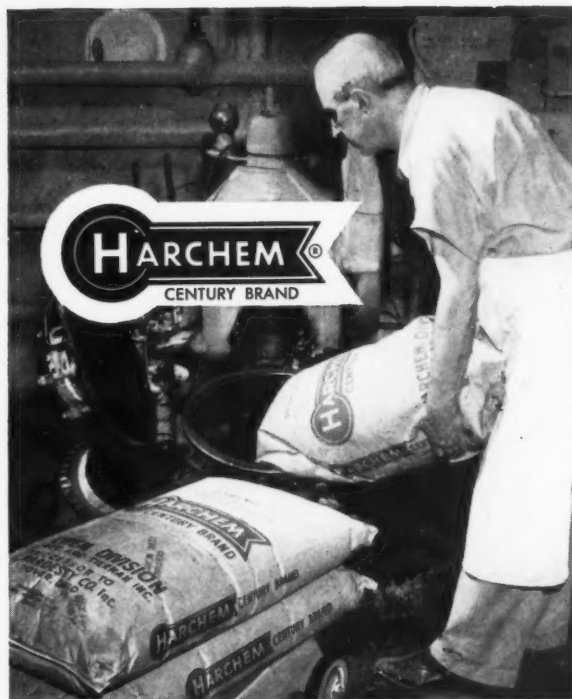
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## Products and PROCESSES

### Soap Sheet Unit

A machine for the continuous manufacture of sheet soap consists of a spool, carrying a paper ribbon; a soap bath; and driving and winding mechanisms for the soap coated sheet; and a tunnel type drying apparatus provided with heating and ventilating devices. The apparatus is designed and arranged so that the paper sheet, coated with soap, which enters wet at one end of the tunnel comes out perfectly dry at the other end. Economy and high output are claimed for this set up. Brit. patent No. 752,517, 1956, Safodik (Great Britain) Ltd., Leeds.

—★—

### Car Shampoos

Synthetic detergents based on dodecyl benzene sulfonates are suitable for car washing compounds in powder form. Alkyl aryl sulfonate flakes (40 to 80 percent active material) exhibit a certain lime sensitivity and it is advisable to compound the concentrated powder with phosphates of good sequestering properties for lime and magnesia and with a low pH. Hexametaphosphate or tripolyphosphate are most suitable for the purpose. A mixture of 50 parts of 40 percent active dodecyl benzene sulfonate powder, 10 to 15 parts of sequestering phosphates, and 35 to 40 parts of sodium sulfate are said to yield a satisfactory car shampoo. A four to five percent solution of this compound may be applied to the car body with a rag or soft brush and the car then rinsed with a water hose. As an alternative, a dilute solution (one half to one percent) may be generously applied to the car body and hosed off or rinsed with buckets of water.

Paste car shampoos should incorporate a very fine abrasive with dirt absorptive capacity, such as diatomite, silica or fine pumice. The paste is rubbed on the surface. The abrasive facilitates removal of

road dirt, grime and oil. The shampoo is simply rinsed off with water. Harsh abrasives and alkaline builders must be avoided because they might damage paint. Two suggested formulations follow: (1) 50 parts "Teepol" (30 percent active secondary fatty alcohol sulfate); 20 parts white bentonite; 30 parts diatomite, silica or fine pumice. (2) 25 parts 50 percent active dodecylbenzene sulfonate slurry; 25 parts water; 20 parts bentonite; 30 parts diatomite or fine pumice.

For the removal of heavy soil and encrusted dirt on delivery cars and trucks an organic solvent may be incorporated: (3) — 30 parts "Teepol"; 20 parts pine oil are mixed to form a clear water-soluble paste, to which are added 10 parts bentonite and 25 parts very fine pumice, and/or diatomite.

Liquid car shampoos may

be based on straight liquid detergents such as "Teepol" or on dodecyl benzene sulfonates which are wholly or partly neutralized with triethanolamine, to give a highly concentrated solution in water. (Sodium dodecyl benzene sulfonates do not exhibit good solubility in water. More than six percent solution in water tends to give whitish separation at temperatures below 12°C.) A liquid car shampoo with about 20 percent active detergent matter may be made as follows: 100 parts sodium dodecyl benzene sulfonate slurry (50 percent) are mixed with 100 parts of the corresponding triethanolamine sulfonate (50 percent active), the solution is finally made up with soft water to give 500 percent. Liquid car shampoos containing solvents may be made by adding about 20 to 50 percent pine oil to "Teepol." A clear viscous product results which is clearly soluble in water. A. Davidsohn, Haifa, Israel, in *Soap, Perfumery and Cosmetics*, Sept. 1956, p. 1017.

### P&G Reveals Continuous Syndet Process

PROCTER & GAMBLE CO., Cincinnati, revealed recently for the first time a number of details concerning its continuous process for the manufacture of synthetic detergents. The equipment set up consists of a mixing pump, a small heat exchanger, another mixing pump and exchanger, two tanks, and a good size spray drier, according to company spokesmen. The first pump and heat exchanger with piping make up a "loop" of reacting materials. P&G spokesmen D. D. Whyte and Jack Newman call it a "dominant bath." Into it are continuously pumped oleum and feed stock—alkyl benzene for sulfonates, fatty alcohols for sulfates. Acid and stock start reacting and are then cycled to the heat exchanger. Here the reacting mixture is pumped through the heat exchanger shell instead of the tubes as would be expected. By pumping through the shell large volumes of fluid can be handled and since

cooling water passes through the exchanger tubes, rapid removal of heat of reaction is ensured.

After the exchanger some of the reaction mixture goes to the neutralization system but most of it is recycled to the mixing pump. The ratio of take off to recycled material is not revealed.

Essentially the same equipment serves for sulfonation or sulfation. Sulfonation causes few problems, usually gives yields of 98 percent, in some cases dropping to 96 percent. Reasons for the variation are side reactions caused by incomplete mixing at the point of acid/stock injection to the "dominant bath."

Sulfonation follows a smooth time-temperature curve. Once the reaction peak is reached neither higher temperature nor longer contact times will alter the extent of sulfonation. Hence the mixture is passed through a delay step—a

(Turn to Page 245)



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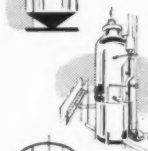
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## PRODUCTION *Clinic*

By E. G. Thomssen, Ph. D.

**I**N travelling from Copenhagen to Amsterdam, the route traverses Northern Germany. There is much evidence in this section, as was the case in other parts of West Germany, that this country is busy and prosperous. One estimate of how far the Western European countries had recovered since the late war is in the form of what was termed by an English economist a "coefficient of recovery." He gave Germany a coefficient of about five with the nearest competitive nation having a coefficient of about one and three quarters. In other words, Germany has recovered about three times more rapidly than any of the other countries in his opinion. The main reason for this is that the German producers are working hard and intelligently. One example is typical. It concerns the rebuilding of the badly bombed cities along the Rhine. To replace rapidly buildings which were mostly rubble in a city like Cologne, which was three-fifths destroyed, requires large quantities of concrete blocks. The pre-war capacity to make these was limited. As houses, offices and factories are a prime necessity to getting back into production, the Germans increased their facilities to make concrete blocks many times and located the plants on the Rhine's banks where transportation facilities are excellent. The old and new factories already are all busy and many operate on an overtime schedule. The chemical industry, I was informed, was operating at over 100 percent of capacity. The detergent companies keep very busy. A household syndet in this line which one could hardly miss knowing about is called "Rei." Billboards, buildings, railroad overhead bridges, etc., are plastered with signs advertising it. The publicity methods are evidently effective

as it is also widely displayed in shops.

Holland, also, is a busy place. In this country, especially around Amsterdam, one finds many large factories. Between Amsterdam and Zaandam, American auto and other companies are erecting large, modern additions to their plants. Hilversum is also well supplied with industry. Rotterdam is recovering more slowly. Widespread destruction from the terrific bombings of May, 1940, which destroyed much of this city, is still evident.

While in Holland I took the opportunity of visiting my friend Adolph Schwarz, president of Polak & Schwarz, at Zaandam. Mr. Schwarz had a hard time during the war. The Nazis imprisoned him and once he was condemned to death. They took over his plants and operated them under duress for five years. He bears surprisingly little evidence of his ordeal.

This company is one of the world's largest producers of fine chemicals, flavors, synthetics and oils. The working forces in the Dutch plants number almost a thousand. Polak & Schwarz operate in seventeen countries and have plants in many of them. Mr. Wiegman, their publicity director, kindly

Dr. E. G. Thomssen

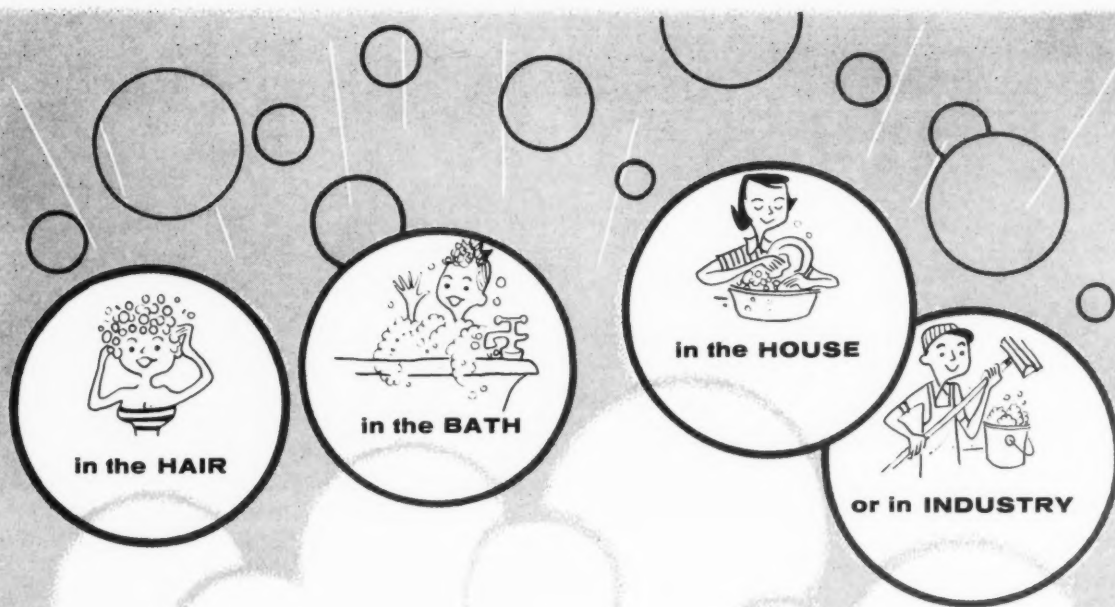


gave me an afternoon of his time to show me their operations. While Zaandam is their main office, the Hilversum plant produces most of the items.

Superficial aspects are most prominent when one goes through a plant. The Dutch have an excellent reputation for orderliness and cleanliness. These two attributes play a large role in plant efficiency. The P. & S. plants are an excellent example of this. Their machinery and equipment are constantly serviced by skilled mechanics who maintain a well-equipped machine shop. Great care is also exercised in keeping all chemical apparatus and laboratory instruments in the best of condition. The buildings have been modernized and are well-arranged, even though some of them are old. The firm also gives attention to the employees health and recreation. Social welfare work is not overlooked. Showers and sun ray rooms are available, not only to the factory employees, but to their families as well. I learned also that the company has instituted a fund for the education of gifted children of members of the staff. P. & S. maintain a resort in the country, where employees and their families may enjoy camping and other outdoor pleasures in a fine, large recreation building surrounded by woods and moors.

There are numerous research and control laboratories scattered through the plants. Each of these work on some phase of problems relating to their large range of products. The company proceeds on the basis that production commences and ends through laboratory control. Small batches are made in the laboratory, approved in a pilot plant and then made in quantity under strict laboratory control.

As previously stated, aerosols are not too plentiful in Europe as yet. I was rather surprised to note that P. & S. were conducting a very comprehensive investigation of aerosol production, including filling methods, formulations, suitable



# Foam "Insurance"

begins with Emulsol's EMCOL 4100 series

Shampoos, bubble bath bases, dishtergents, frothers . . . yes, household and industrial detergents, too . . . all have one wonderful quality in common when you formulate with EMCOL 4100 Series: high, tenacious foaming for maximum sudsing and good wetting.

But you get more with these anionic fatty amide sulfonate detergent-foamers. More and better cleansing action, more freedom from irritation, more customer happiness all the way. Three different types to choose from: EMCOL 4150 (a liquid) . . . EMCOL 4155 (a powder) . . . EMCOL 4100 M (a paste especially suited to liquid cream or paste shampoos).

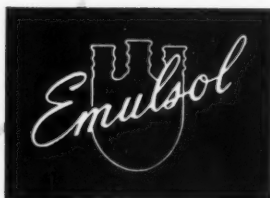
**TEAM-MATES** • EMCOL 5100 SERIES . . . non-ionic fatty alkanolamides for non-ionic detergents, thickeners, foam enhancers and emulsifiers (full details in Technical Bulletin #44)

• EMCOL 61 . . . fatty amide hair conditioner for shampoos

• EMCOL MAS . . . fatty amide shampoo opacifier

• EMCOL MM . . . fatty amide shampoo opacifier and foam stabilizer.

**yours**  
for the asking!  
Our New Technical  
Bulletin #48 describing the  
EMCOL 4100  
Series.



## EMULSOL CHEMICAL CORPORATION

division of Witco Chemical Company

Dept. S-12 • 59 East Madison Street, Chicago 3, Ill.

serving many other industries with dozens of EMCOL emulsifying agents . . . especially the pesticide and herbicide fields.

packages, shelf testing, perfuming and all other relevant problems. It was enlightening to see how thoroughly they approach a problem.

The packing and shipping rooms are of more interest than those of most plants. Most of their business is export. Packaging for export is complicated in order to comply with numerous foreign custom regulations. The offices also are large and divided into sections each of which services one or several foreign countries. It was noted that much of the office, cost and accounting detail was done with American I.B.M. machines.

The afternoon spent with the P. & S. organization was a highlight of my tour. It gave an insight of how a large European chemical concern operates.

Little time was spent in France. Those in the industry with whom I discussed business exhibited a spirit of pessimism. The war in Algeria, the Suez seizure and constant changes in government are matters of great concern. Prices throughout France, in spite of the cheap franc, are very high. This is hurting not only domestic business, but tourists complain and scatter the bad news. Exports, too, are falling. France does not appear to be too prosperous.

In Spain business and industry are conducted in a leisurely manner. There was considerable discussion while I was there regarding a new regulation revising business hours to help speed up industry. These had just been adopted in Madrid. In other localities, like Seville, conformance with the law is not too good.

The Spanish business man comes to work about ten in the morning. He closes his shop by twelve or one and then opens again anywhere between four and five o'clock in the afternoon. The excuse is that it is too hot to do business during these hours, even though it is not as hot as in our Southern states. Then he opens up again between four and five and keeps open until eight or nine in the evening. In most hotels the

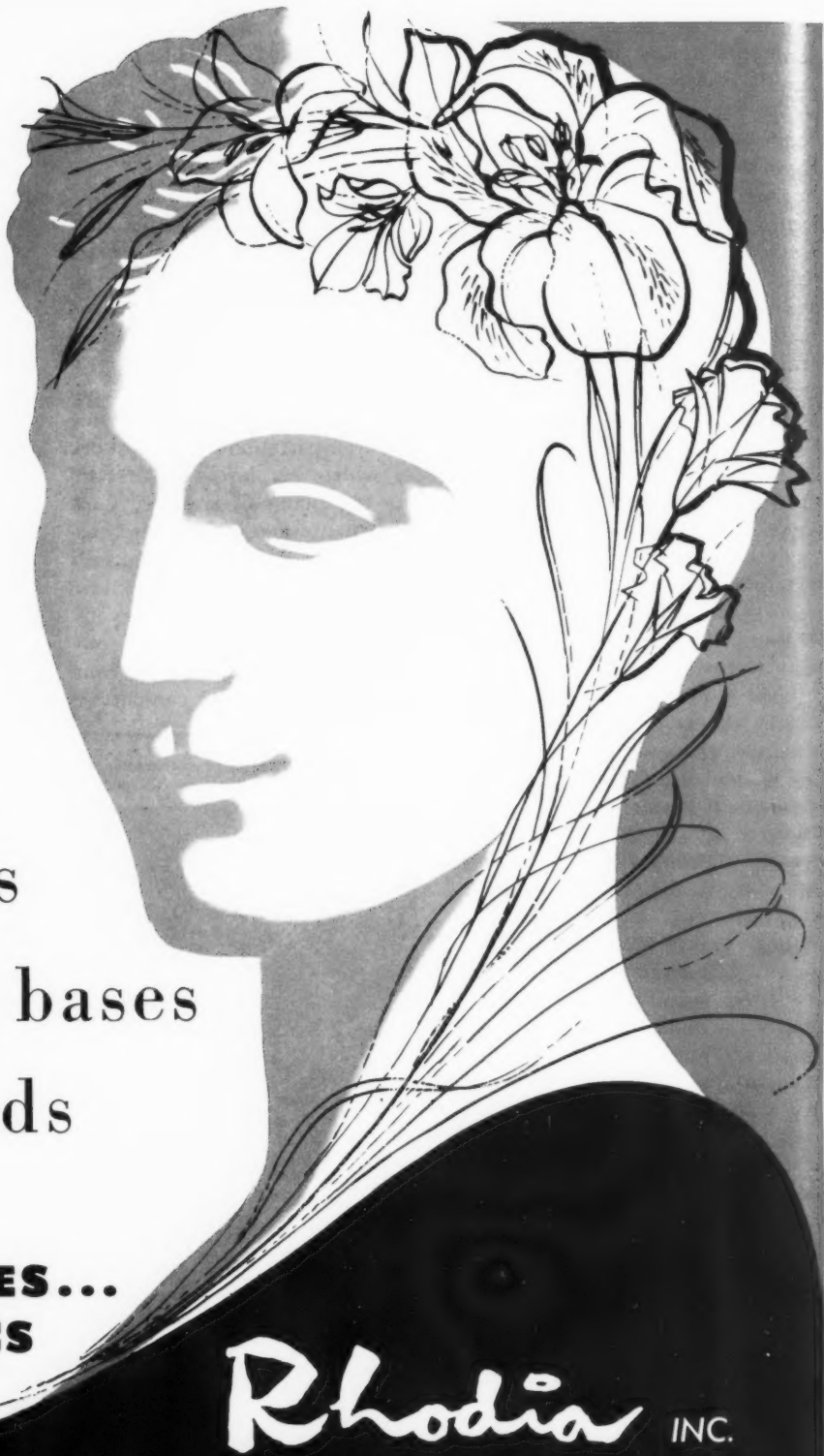
dining room for evening meals does not open until ten. The retiring hour is in the wee small hours of the morning. Under new regulations adopted by banks, government offices and some factories, the nine to twelve and one to five routine, we follow, is being put into effect. It was not at all popular but was reflecting itself in greater working efficiency where adopted. Some liked it because it gave opportunity for more daylight, outdoor activities.

One sees very little mechanization of any sort in Spain. Mule back transportation and hand work are widely employed. There are very few plants of any size. Lack of mechanization is probably beneficial to the economy as it spreads employment. Wages are very low. In one plant in Southern Spain, which I visited, many girls were employed doing close, eye straining work. They were paid fifteen

pesetas a day, equivalent to about thirty-seven and a half cents in our money. All seemed to be very happy in the ill-equipped factories I went through. Much work is done by young boys who receive even lower wages. A truck driver informed me he received about fifty cents a day. I watched the filling and labelling of bottles in another plant. The equipment used was praised to me by the superintendent as being very rapid. We would have junked it years ago. There was a gang of two men and six girls carrying out the operation. Their capacity was fifteen per minute. In another plant I was amused at the handling of a powdered product made in considerable quantity. The raw material came in large chunks. Men with large, long handled hammers broke it into the size of walnuts. These were scooped up by hand into small  
(Turn to Page 257)

Top photo shows main production plant of Polak & Schwarz in Hilversum, Holland. Lower photograph is of the P&S plant and main office in Zaandam, Holland.





**fine  
aromatic  
chemicals  
☆  
specialty bases  
☆  
compounds**

*for* **TOILETRIES...**  
**...COSMETICS**

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Philadelphia • Cincinnati • Chicago • Los Angeles • Canada : Naugatuck, Montreal • Cuba : Luis Felipe, Havana • Mexico : Comercial Reka, Mexico City



By John W. McCutcheon

**T**HE "Menisco-matic Brush" made by American Instrument Co., Silver Spring, Md., is the next item in our report, started last month, on the recent instrument-automation show in New York. The unit, shown on this page costs approximately \$250. Capable of saving time and reducing errors, we believe this device to be potentially useful in the detergent industry.

A small metal plunger about  $\frac{3}{8}$ ths of an inch in diameter moves down the heavy part of the burette tube and displaces the sealed-in liquid, forcing it out of the end in a steady stream. The movement of the plunger is precisely indicated in R.P.M. By choosing the right plunger diameter and gear ratios, the volume of liquid displaced can be directly associated with rotation and with the numerical reading of the counter.

The titration volume runs from .001 to 3.5 ml. with an error claimed to be less than  $\pm .004$  ml. Each revolution of the counter represents .001 ml. and a graduated drum enables readings to be taken down to .0001 ml.

The writer observed the operation of this machine and found that it may be handled quite easily as described. It is precision-made and there seems no reason to doubt the manufacturers specifications. It fills and empties at varying speeds with safety limit switches to prevent trouble. The fine point of the pyrex burette would minimize any meniscus error, and in the samples noted the tip was maintained below the liquid surface.

Reading a counter is an attractive way to obtain data particularly if it can be made to represent ml. directly. The coefficient of expansion of the plunger does not offer serious problems since most solutions are calibrated at a set



temperature anyway and therefore the glass and metal would be evaluated together and the strength of the solution adjusted for the operation at hand. An error of  $\pm$  four parts per thousand represents  $\pm$  0.1 ml. on a titration of 25.0 ml. This is not very accurate. However, the data of the manufacturer indicate an intrinsic  $\pm .004$  ml. error on either .01 ml., .1 ml. or

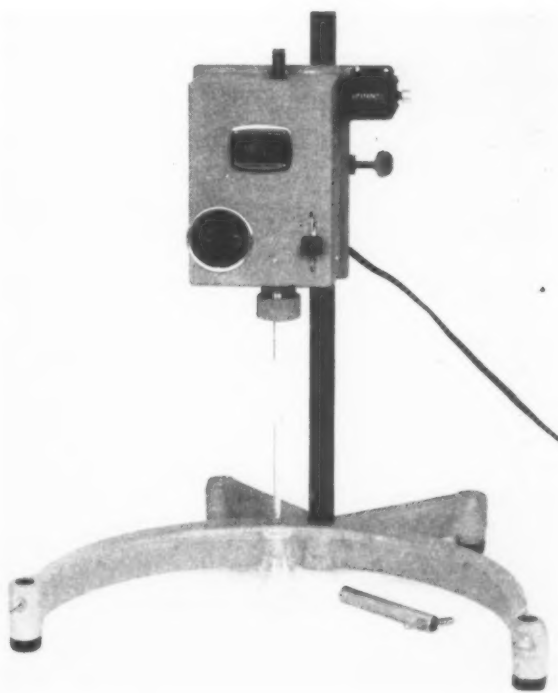
3.5 ml. and under these conditions the 25 ml. example titration above would represent an accuracy on the "Menisco-matic Burette" (translated to 10 times the concentration at 2.5 ml.) of .004 ml., which is considerably closer than a standard burette can be read.

This instrument would be useful in a set type of operation where the number of repeat operations would reach 25 or more a day. In such cases eye fatigue in reading a burette would tend to increase errors over those transcribed from a counter. The writer is thinking of group titrations for iodine value, or glycerine, particularly electrometric titrations of the latter, although a special curved tip would be required to admit the stirrer to the flask.

The question of meniscus variation with a highly concentrated solution might be raised. The writer does not believe this would cause any difficulty. Ground glass pipette tips have been used for many years in automatic dispensing burettes and pipettes for concentrated solutions and there is no reason to believe this application would not be as successful.

Ultrasonics as a method of

"Menisco-matic" device made by American Instrument Co., Silver Spring, Md., and described on this page permits direct reading of titration data. Each revolution of the counter represents .001 ml.



Chicago, Illinois . . . where Dow caustic serves alkali formulators.



**wherever you're producing**

**DEPENDABLE CAUSTIC SODA DELIVERY IS ASSURED FROM DOW**

Dow is the one producer, you know, supplying caustic soda to industry everywhere. Wherever you produce, you're sure of getting rapid, dependable service from Dow.

The three modern Dow plants and six additional shipping terminals . . . stretching from Bayonne, New Jersey to Los Angeles, from Chicago to Freeport, Texas . . . start the order to you immediately on your teletype, wire or call. Ocean-going tankers, inland barges, tank cars and

tank trucks . . . the full facilities of the industry's most extensive and flexible distribution network go to work without delay, getting Dow caustic to you now.

Then, too . . . Dow customers benefit from continual process research, stringent quality control in plant and in transit, prompt field technical service. Does Dow have your order? THE DOW CHEMICAL COMPANY, Dept. AL 756G-1, Midland, Michigan.

*you can depend on DOW CHEMICALS*



cleaning is making very good progress. Branon Ultrasonic Corp., 37 Brown House Road, Stamford, Conn., presented a particularly interesting demonstration in this field. An ultrasonic generator, delivering 50 watts, was connected to a ceramic transducer of barium titanate which was immersed in the cleaning solution. (Why the writer does not call it water will be learned presently.) This transmits energy to the solution in the form of vibrations at about 40 kc/sec. The solution was contained in a metal canister of about two quarts capacity. Small objects placed in the solution were literally shaken clean in a matter of seconds. This would be a particularly useful process for small parts manufacturers. The solution may be water or solvent.

One demonstration consisted of drawing a few lines with a soft pencil on a frosted glass slide, putting another slide over it, and holding the slides under the surface of the liquid. The pencil marks literally melted away and were flushed from between the slides in a matter of seconds. It was a very convincing demonstration. However, for some reason, the writer asked a foolish question! What, besides water was in the container? The answer, "A few drops of a good wetting agent"! Even with ultrasonics, synthetics do help.

The moral is, when fighting a war on dirt, you use all weapons available. More power to ultrasonics! Now let us sell detergents to these people.

From this report the reader may conclude where ultrasonics stands as a competitive cleaning method. There is really no competition. Ultrasonics show what a method of vibration can do in the presence of a cleaning solution. (Months ago in this column we showed what ultrasonics could do when an emulsifiable mixture was present). Ultrasonics will never displace the established industrial cleaning practices, but it will have

(Turn to Page 219)



THE FAST,  
SURE WAY  
TO APPLY  
**AEROSOL**  
OVERCAPS

## The CONSOLIDATED MODEL H-O-F CAPPER

- .... **Automatically** sorts and applies all the various types of aerosol caps now being used.
- .... **Applies** odd shapes as well as conventional types.
- .... **Equipped** with variable speed controls and can be arranged for speeds from 60 to 250 caps per minute.
- .... **Changeover** from one size container to another can be made easily and quickly.
- .... **Easily** fitted into any aerosol filling line.

*If you are using aerosol containers, be sure to get all the facts about the Consolidated H-O-F Capper for applying the overcaps before you buy.*

Write for complete information

**CONSOLIDATED PACKAGING MACHINERY CORP.**

1400 West Ave., Buffalo 13, N. Y.

**Vital Part Of Another,  
Water-Base Aerosol  
Packaging Success**

**VALVE BY RISDON**



The new push-button bonanza for housewives—Jet-Spray BON AMI is one of the latest pressurized products dispensed by a Risdon 5210 valve.

This is a water-base product which cannot be mixed with the propellant; therefore a three-phase dispensing system is used. This system calls for a 5210 valve equipped with a Risdon "Micro-Mist" actuator which produces a fine, atomized spray by a mechanical shearing effect. For conventional aerosols (2-phase) the valve is supplied either with standard Risdon actuators or with "Micro-Mist" actuators when a finer, drier, wider-cone spray is desired.

The 5210 valve has proven an ideal control for virtually the entire range of aerosols. It uses no spring and is made entirely of nylon and rubber except for the metal mounting cup. It is suitable for vertical or horizontal sprays or for foam dispensing. This same basic valve is also available adapted for glass or plastic containers.

\* Patented

**RISDON VALVES FOR:**

Pressurized Products Packaged in Glass, Metal or Plastic Containers.

**DISPENSING:**

Conventional Aerosols, 3-Phase Products, Alcohol Base Products, Water-Base Products, Foam Products, Powder Sprays, Metered Sprays, Ultra-Low Pressure Applications, Products Containing Propellant Emulsions or Dispersions, etc.

**SEND FOR THESE FREE BOOKLETS**

Both the 5210 valve and its glass container counterpart, the GB valve, are described and illustrated in detail by these bulletins. The "Micro-Mist" and other actuators are also covered. Ask for 5210 and GB valve bulletins.



RI-82



**THE RISDON MANUFACTURING COMPANY**  
Valve Division, Naugatuck, Conn.



# Packaging...

**AEROSOLS • LIQUIDS • PASTES • POWDERS**

Grand award winner of the 1956 aerosol packaging contest, sponsored by the Chemical Specialties Manufacturers Assn., was won by "Air Spray by Lactopine," a product of Swiss Pine Importing Co., New York City. Product took first place in the room deodorants class and judges voted it "best of show". Photographs of other nine winners appear on pages 180-181.

Automotive  
Chemicals  
Cleaners  
Detergents  
Deodorants  
Disinfectants  
Floor Products  
Insecticides  
Laundry Bleach  
Metal Cleaners  
Moth Products  
Polishes  
Shampoos  
Shave Products  
Soaps  
Liquid Starch  
Toiletries  
and other  
Chemical Specialties

*A market for over 20  
billion packages annually*



# OWENS-ILLINOIS ASSURES YOU A



Co-ordinated Research

*Pure research* into formulae and fabrication of glass, *packaging research* into processing and handling methods in customer plants, and *market research* into consumer attitudes, add up to greater specific value for your packaging dollar.



Engineered Design

The package that takes your product to market must take *three* needs into account. Considerations of its function in the retail store, its operating efficiency and its consumer utility all become a part of the prescription for an Owens-Illinois package.



The Right Container

Facilities at Owens-Illinois are versatile. Talents are varied and many. So you can count on obtaining a container exactly suited to your needs—one that blends salesmaking beauty, product protection and utility in the proportions required to attract customers.

## Air Freshener or Disinfectant—



# COMPLETE PACKAGING APPROACH



**The Right Closure**

Know-how as to the best available liner and closure—best for packing, displaying, or using a specific product—may well be one of the most important single points through which expert packaging counsel will reward you many times over.



**Needed Fitments**

With emphasis on the word "needed," Owens-Illinois specialists are keenly aware of sales benefits possible through use of plastic shaker and pour-out fitments which are not "gadgets" but which increase consumer satisfaction with your product.



**Merchandising Cartons**

Modern cartons are developed only through systematic consideration of their opportunity to serve you in the retail store and retail warehouse as well as on your own filling line and in transit. Owens-Illinois is pioneering such developments.

## help yourself to sales...



*with an Owens-Illinois  
package that sells through  
convenience in use*

IMPULSE BUYING plus product recognition is largely responsible for the record increase in store sales.

Marketing your product in a well-designed and engineered glass container puts your merchandise up front in the sales parade.

Glass can be designed and molded into a salespackage to catch the customer's eye in advertising campaigns as well as in the store where sales are made. Glass also is an

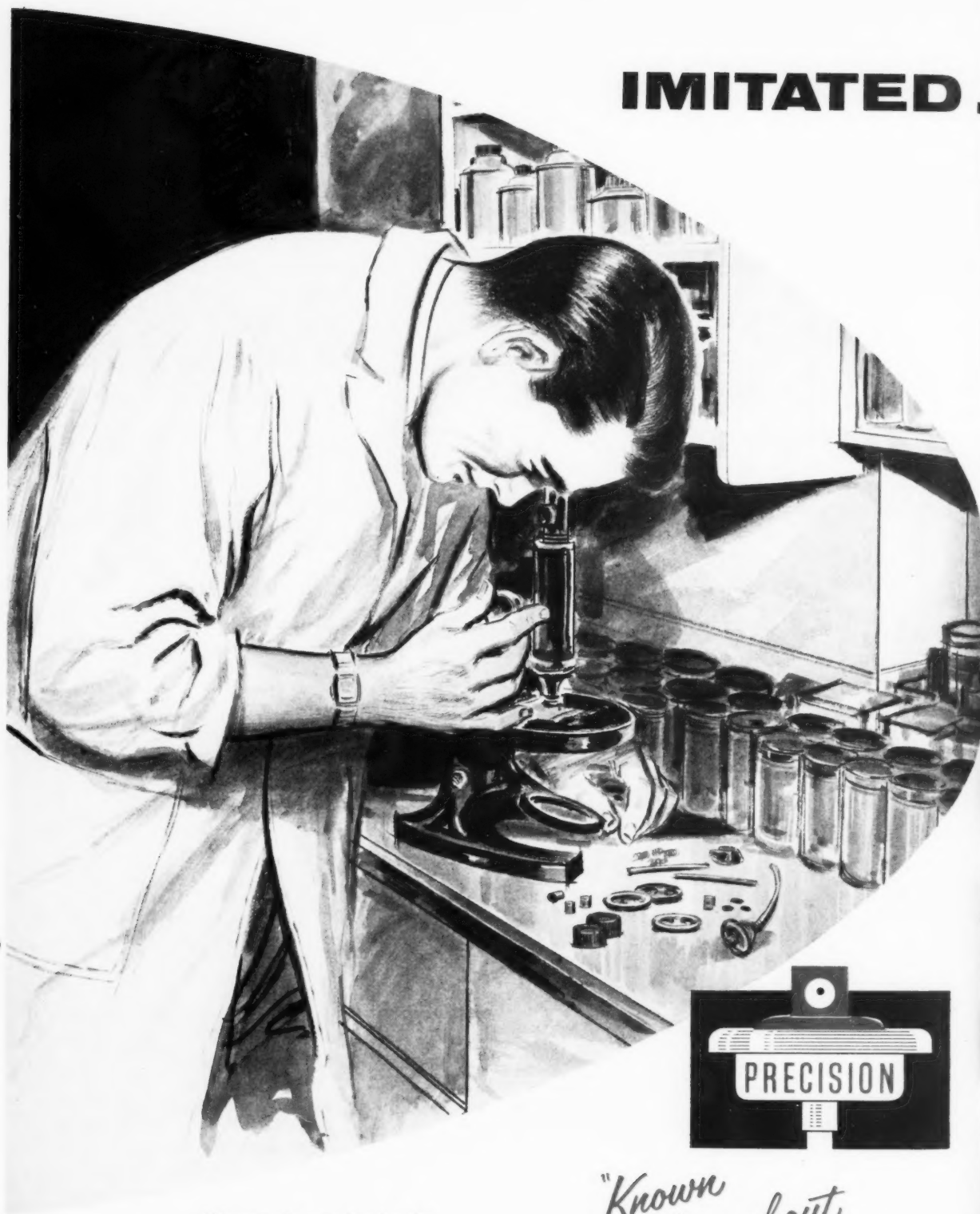
efficient salesman when it comes to convenience and product protection. The quality of the contents is maintained throughout many openings and closings. The housewife can readily see how much she has left.

Skilled packaging designers at Owens-Illinois will gladly help you create a sales-making label and closure combination for your product. There are hundreds of different sizes, styles and shapes of stock-model bottles from which you can choose.

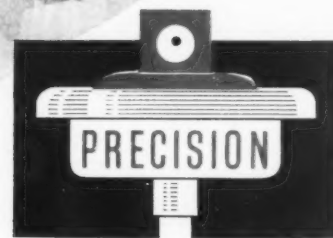
**DURAGLAS CONTAINERS**  
AN **I** PRODUCT

**OWENS-ILLINOIS**  
GENERAL OFFICES • TOLEDO 1, OHIO

**IMITATED.**



Microscopic examination for  
structure of plastic components after  
exposure to aerosol formulation

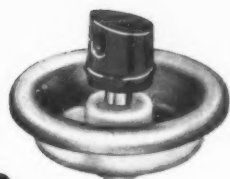


*"Known  
throughout  
the World"*

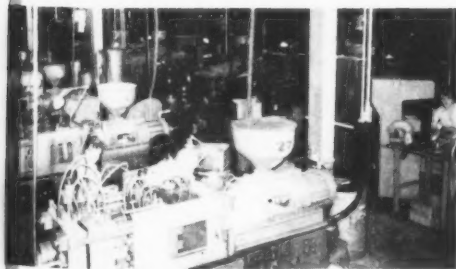


**D. BUT  
NEVER  
DUPLICATED -**

**THE** *Precision Valve*



Engineering Department



Molding Department



Quality Control Department

From planning to commercial production, a new aerosol product requires infinite knowledge, effort and research. Almost every phase of human endeavor contributes its share to the completed product.

The final use, however, is dependent upon the proper valve, which is carefully designed, engineered, and manufactured to produce the proper dispersion of spray, mist or foam.

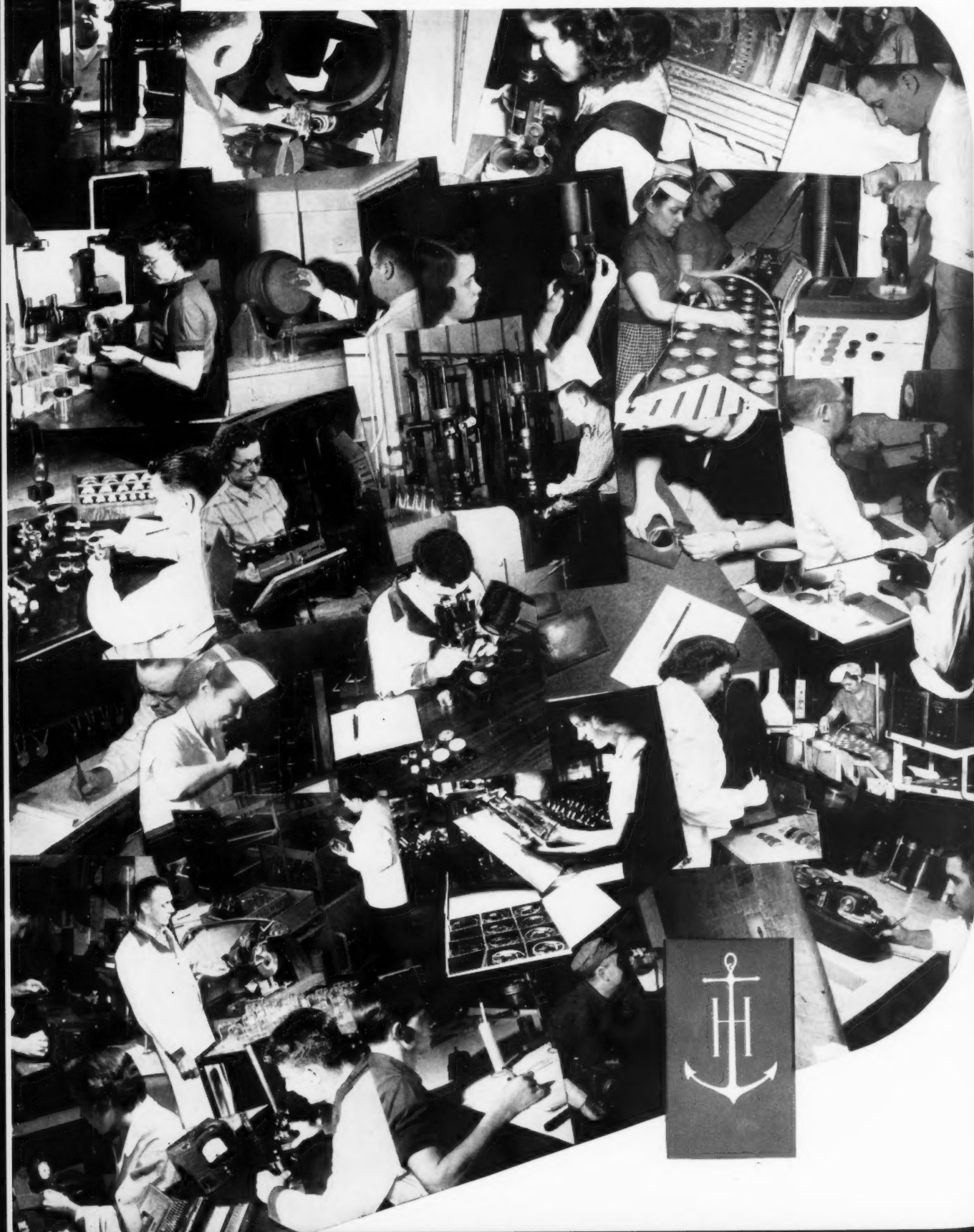
We at Precision are ready to help you, whether it be formula, package design, or production. Our facilities can be our contribution to the success of your business.

Whether it be a million and ten or just ten . . . Precision has or will develop the aerosol valve for your product. Our large quality control department assures you of the finest results along with the economy required for profitable sales.

*Precision Valve Corporation*

700 NEPPERHAN AVENUE • YONKERS, N.Y.

# CONTROL IS A



# IS ALL-IMPORTANT

## *with Anchor Hocking!*



Regardless of what you pack Anchor Hocking makes an Anchorglass container in a style, size and color to most attractively, efficiently and economically package it. And, to seal your glass-packed products, there are Anchor molded screw caps and metal screw, lug and vacuum types available—one or more of which will completely satisfy your diverse and specialized requirements.



**T**HE controls applied throughout your production and packaging operations are all-important to you. By the same token, the manufacturing controls employed by Anchor Hocking are very important to you, also.

Anchor Hocking exercises literally hundreds of exacting controls, tests and checks daily in the manufacture of its glass containers and closures. From the selection of all raw materials used to the final inspection, every

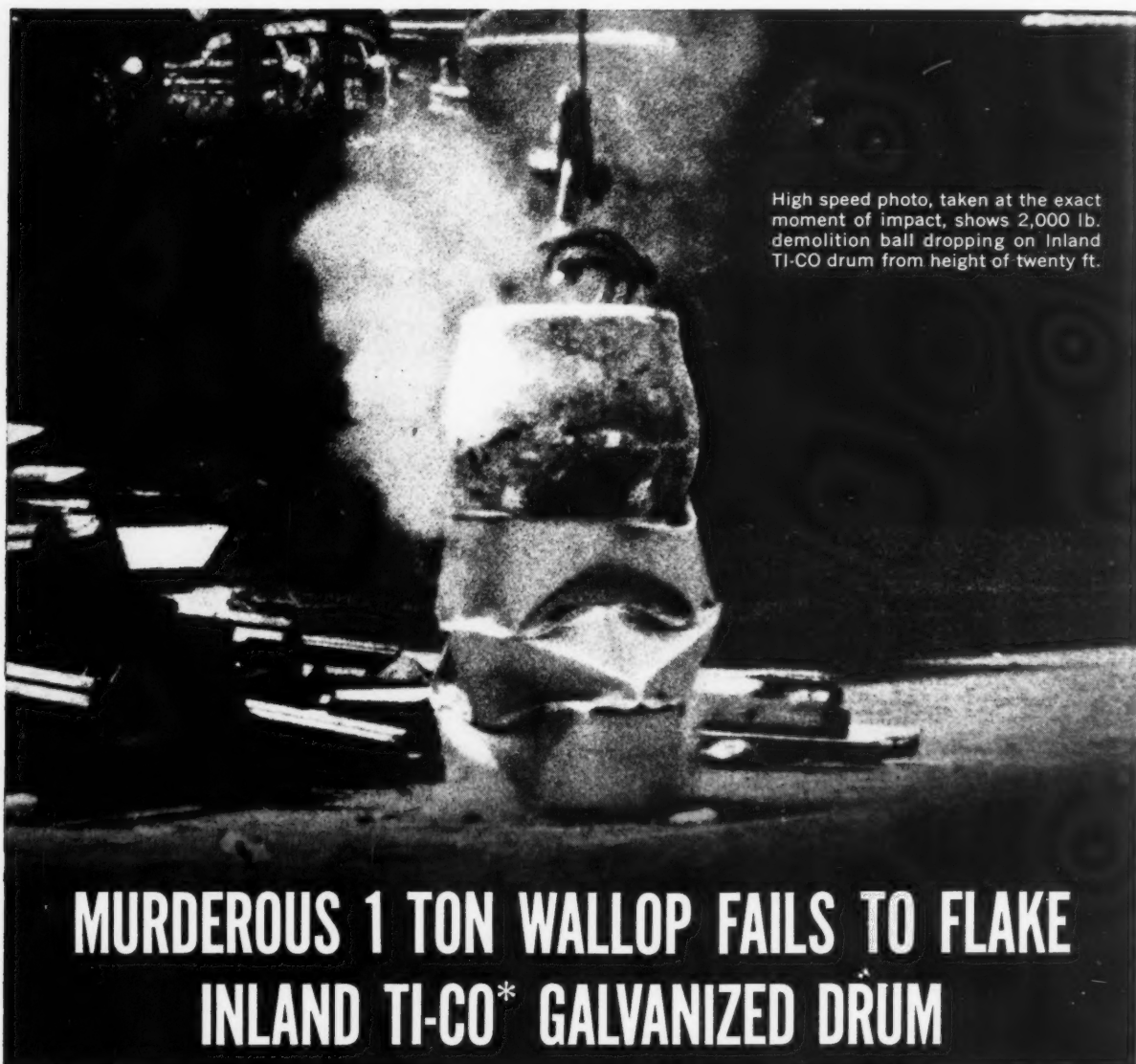
operation is under meticulous control.

And all of this control, involving highly trained chemists, bacteriologists, engineers, other technicians and personnel, is done but for one reason. And that is, to provide you with uniform, high quality, dependable Anchorglass® containers and Anchor® screw, lug, vacuum, metal and molded closures that will give you high-speed, dependable production and protection.

# ANCHOR HOCKING

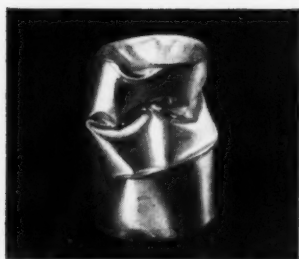
**GLASS CORPORATION** Lancaster, Ohio





High speed photo, taken at the exact moment of impact, shows 2,000 lb. demolition ball dropping on Inland TI-CO drum from height of twenty ft.

## MURDEROUS 1 TON WALLOP FAILS TO FLAKE INLAND TI-CO\* GALVANIZED DRUM



Close-up of drum used in demolition ball test. Not a single sign of flaking, inside or out.

It's a pretty good bet that the galvanized drums you are now using won't be subjected to the torture test shown above. It is good to know, though, that if they are Inland TI-CO drums, you'll never have to worry about the zinc coating flaking off to give rust a foothold. The container and its contents are protected . . . both inside and out . . . even under the "roughest" shipping conditions.

If you ship turpentine or other products that require a container with an all-over protective zinc coating, it will pay you to specify economical, all-weather Inland TI-CO Galvanized drums . . . the drums with the zinc coating that rolls with the punch.

Whatever your packaging problems, talk them over with an Inland container specialist.

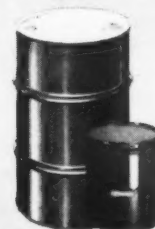
Write Bob Boecher, Dept. 317D.

Full line of steel and stainless steel shipping containers, including galvanized and heavy duty ICC drums.

### INLAND STEEL CONTAINER COMPANY

Division of Inland Steel Company, 6532 South Menard Avenue,  
Chicago 38, Illinois • Plants: Chicago, Jersey City,  
New Orleans, Cleveland and Greenville, Ohio.

\*Registered trade mark of Inland Steel Company



"It's Better to Ship in Steel"



Courtesy of Roussel Corporation



## controlled packaging \*

ROUSSEL'S "Topicort Spray" offers topical hydrocortisone in its most efficient, economical, and convenient form . . . as a finely controlled aerosol manufactured by FLUID CHEMICAL COMPANY in a pressurized, safety-coated, glass spray bottle.

This ethical pharmaceutical product is the successful result of "controlled packaging", the exacting standards of FLUID and of the customer, and through excellent cooperation in research and development. Such complete control is achieved through constant laboratory analysis, automation filling, continual inspections, and scientific materials handling . . . plus prompt delivery and economy.

All FLUID'S efforts are directed solely toward filling customer needs — we manufacture no products of our own.

We shall be pleased to give more facts on "controlled packaging" by FLUID.

*"First in Contract Packaging"*

# FLUID

CHEMICAL COMPANY INC.

880 MT. PROSPECT AVE., NEWARK, N. J.

Telephone HUmboldt 5-2880



PRODUCTS: AEROSOLS GLASS AND METAL  
LIQUID TUBE JAR DRY PACK FILLING  
RESEARCH • DEVELOPMENT

FOUNDED 1921

# Preferred for Foam Product Dispensing because of Functionally Superior,

## Clayton

"NOZZLE DOWN"

dispensing valves and covers

Ever increasing and impressive...the nation-wide preference for "Nozzle Down" valves and covers for shaving creams, hand creams, shampoos, suntan creams, rug and upholstery cleaners...all foam dispensed products! Why this definite Clayton-trend? Because of these proven, outstanding Clayton features:—

**ABSOLUTELY TROUBLE FREE!** Proven simple non-clogging design.

**GREATER PRODUCTION ADVANTAGES!** Valves can be pressure filled. Reports from users indicate very highest production speeds.

**ALL VALVES AVAILABLE WITH COATED MOUNTING CUPS!** Colored-enamel exterior coatings... highest quality corrosion-resistant interior coatings.

**COMPLETELY, SECURELY ASSEMBLED!** Nothing to put together. Components can't come apart in shipment or use.

**VARIOUS FLOW RATES!**—to suit specific product requirements!

**FIT ALL TYPES OF PRESSURE CONTAINERS** with standard 1" diameter openings. Also available for 202 and 211 diameter pressure-type cylindrical containers of all sizes.

**NO ACCIDENTAL DISCHARGES!** Exclusive screw cover principle assures absolute safety. Valve is securely locked in non-dispensing position when covered.

**TIME-TESTED AND PROVED ON HUNDREDS OF MILLIONS OF CONTAINERS!**

### These Clayton Products Give Your Package

MORE GLAMOUR

#### Clayton's "Dress-Up"



Plastic skirt simply and permanently snaps on to top of container.

#### Glama-Walls and Covers

The Glama-Wall snaps on permanently to standard production containers. User simply removes small, handsomely designed locking screw cap. Available in an unlimited variety of colors, shapes and sizes.



For details on more attractive, economical and efficient packaging for your foam product...write, phone or wire

## Clayton

CORPORATION

# Proven Outstanding Features!



**NO MISSES—NO MESSSES...WITH NATURAL "NOZZLE DOWN" DISPENSING!**  
Points the product where you want it! Leaves no excess on side of can.

**THE ONLY POSITIVE ACTION SCREW COVER AVAILABLE ON THE MARKET!**  
Stays securely!—one easy three-quarter turn and your product is safe for shipping.  
Handsomely designed . . . adds a finished appearance to your product.



**UNIQUE, DISPENSING**

*Perma-Cover™*

Screws on like a regular cap in production  
... never comes off! A simple turn, it dispenses. Another turn, it closes.

## Now These Important Features In a Dip-Tube Valve!

- Dispenses with forward or downward push.
- Pressure fills at highest production speeds.
- Permits uniform gassing.
- Assures smooth, uniform dispensing of products.
- Available with coated mounting cups . . . colored-enamel exterior coatings—highest quality corrosion-resistant interior coatings.
- No metal valve parts exposed to product.
- Covers fit better . . . protect better.

**Clayton**  
DIP-TUBE VALVE



4205 FOREST PARK BOULEVARD  
SAINT LOUIS 8, MISSOURI

DECEMBER, 1956

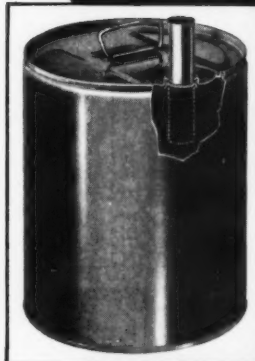
## VULCAN PAILS and DRUMS

# *Yours for* **QUALITY CONTROL — plus**

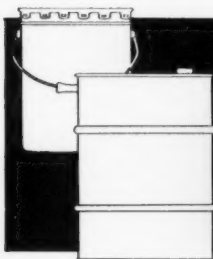
### 10 BONUS FEATURES

1. Eliminate loss from shipping hazards.
2. Prevent contamination.
3. No spilling — No leakage.
4. Shipping space-saver.
5. Pouring Spouts for every need.
6. Available with Hi-Bake Linings.
7. Sizes 1-20 gallons.
8. Speed up packaging operations.
9. Tamper proof.
10. Lithographing by experts.

Every Vulcan Quality Pail and Drum is made from quality-steel — individually tested and inspected. Wide variety of styles — Plain Cover, Open Head Lug Cover, Closed Head Drum type.



**OVERNIGHT SERVICE** — Vulcan sales offices and completely stocked warehouses in principal cities assure prompt delivery. For detailed information and prices, write or wire Vulcan Steel Container Co., Birmingham, Alabama.



## VULCAN STEEL CONTAINER CO.

*Main Office and Factory*

3315 5th AVE., N. • P. O. BOX 786 • BIRMINGHAM, ALABAMA



## Consultants' Role in Packaging

**"H**OW Consultants' Know-How Applies to Packaging of Consumer Goods" was the theme of a symposium held at the recent annual meeting in New York City of the Association of Consulting Chemists and Chemical Engineers. Featured speaker was Leonard C. Cartwright of Foster D. Snell, Inc., New York consulting chemical engineers, with Maurice S. Sage, Sage Laboratories, Inc., New York, acting as moderator.

Packaging is the fifth largest industry in the United States, according to Mr. Cartwright. American industry became "package conscious" owing to the demands of the war and post war period. During hostilities, food and the implements of war had to be shipped and stored under the most rigorous conditions. After the war the most varied types of goods were shipped to needy nations in the far corners of the world, and had to survive transportation and storage by all means and in all climates. The second powerful impetus towards sophistication in all aspects of packaging came through the development of the "help yourself" store, be it supermarket, five and ten cent stores, or other retail outlets, where the package takes over the function of the salesman.

About the current situation in the packaging field Mr. Cartwright cited the following facts:

1. Approximately 90 percent of all wages for labor in the chemical industry goes to packaging labor. Still comparatively little effort is employed to mechanize and automate packaging procedures in comparison with other production facilities.

2. Packaging materials constitute a major expense in the production and distribution of many items of commerce. Still many companies do not even have prepared

specifications covering packaging material requirements to facilitate purchasing of the best at the lowest price.

3. In spite of our progress to date, freight claims for damaged shipments by rail, truck and air will approximate 300 million dollars this year.

4. The importance of trained packaging personnel is just beginning to be recognized.

5. The military needs a perfect method for free-fall, aerial delivery of food and pharmaceuticals.

6. A total of 34 million women either don't have glasses and should, or have them and won't wear them in public. This has not been considered in many package designs which carry lengthy trade names and sales messages in small type. They just are not seen.

7. The influence of package

### CANCO Names Madge

The election of George J. Madge as a vice-president in the executive department of American Can Co., New York, was announced recently by William C. Stolk, president. Mr. Madge has been controller of the company since 1950. He joined Canco 44 years ago as an office boy.

George J. Madge



design on impulse buying has been ignored by many. They have ignored approximately two-thirds of their potential market.

8. Foreign producers of heavy equipment are taking over many export markets due to the persistent American attitude of "buyer beware—I have my irrevocable letter of credit." Check any American port and note the number of packs going to ruination because of the use of domestic packaging procedures.

9. Many packaging material producers watch a whole segment of their markets being taken away from them before they will take action. Witness the waxed paper and glass container industries.

10. Packaging can and will revolutionize any industry, including its own. Remember "Freon" and a valve sells shaving cream, a chipboard carrier sells six bottles of cola and a disposable paper container sells milk.

Like any other branch of applied science, packaging takes expert knowledge in many branches of chemistry, physics, and engineering. You can either develop your own staff of experts or employ the services of many specialists in various branches of the consulting profession.

Among other functions a modern package must:

1. Protect its contents against deterioration from the presence of or lack of moisture and other gases in the atmosphere during distribution and use.

2. Protect against mechanical damage to its contents and be strong enough to be self-sustaining against the same forces.

3. Be, itself, non-contaminating to the item it protects.

4. Provide protection from pilferage.

5. Provide the ultimate in convenience and sales appeal.

6. Do these and other things at a minimum cost.

Involved are an expert knowledge of the chemistry of cellulose, plastics, metals, fabrics, glass and coatings; the physics of shock

Canco's sensational new

# NON-DRIP CAN

*now available for...*

DISINFECTANTS, CLEANERS, LUBRICATING ADDITIVES,  
INSECTICIDES, DETERGENTS, POLISH, WAX AND  
HUNDREDS OF OTHER SPECIALTIES !



**Use it to give new sales life to an old product...  
or to get a new one off with a big head start!**

It's another "first" from Canco—a can with a completely dripless nozzle. It pours freely, instantly, yet it won't drip a drop when the can is righted. But that's not all!

This new can takes full decoration all the way around *and on the top*, thanks to Canco's special side-seam and top construction. It's quick, easy, and economical to fill... it's lighter, handier, unbreakable, too. In short, it's packed with features that you, your dealers, and your customers will like.

If you manufacture or distribute one of the specialties listed above or one like it, find out *now* how this new Non-Drip Can will help broaden your market, increase your sales. Contact your nearby Canco representative today.

**AMERICAN CAN COMPANY**

NEW YORK • CHICAGO • SAN FRANCISCO

COME TO

**CANCO**

FIRST!

and vibration phenomena, stress and strain; the engineering of equipment; the imagination and artistry of a modern da Vinci; the psychology of human motivation; climatology; markets and marketing; and a bit of the old rabbit's foot.

This is no atmosphere for the packaging amateur, the traffic manager or the shipping clerk. The job which, incidentally, presents the greatest single source for production economy can only be done by fully trained, experienced experts. Since such experienced personnel are not freely available, nor will be in sufficient numbers for some time to come, industry must look to the consultant to meet today's needs.

Mr. Cartwright then went on to give an example from the food field to illustrate the variety and complexity of packaging problems arising in the development of one single item.

A few footnotes to Mr. Cartwright's address were added by H. R. Shepherd of Aerosol Techniques, Inc., Bridgeport, Conn. In the pressure packaging field, Mr. Shepherd pointed out, the contract loader and filler takes the part of the consultant. The very nature of the aerosol system poses chemical, physical and engineering problems, not inherent in conventional packaging. Great possibilities of development make this field very rewarding. The pressure containers of the future will include nylon and melamine bottles, to compete with the conventional squeeze bottle. The corrosion problems which have hampered the use of aluminum bottles in the aerosol field have been overcome by the Hunter-Douglas Division of Bridgeport Brass Co., Mr. Shepherd reported. New valve developments will permit the use of different propellants and widen the range of products which can be pressure packaged. He mentioned the departure from the exclusive use of fluorinated compounds by a number of firms who have adopted other hydrocarbons as propellants which have

the advantage of economy and versatility. New problems are posed by the aerosol packaging of such products as tooth paste and certain food products where the propellant must be dispensed separately from the product.

In the ensuing discussion package disposal was mentioned as one of the open problems yet to be solved by the packaging experts.

#### ★ **O-I Appoints Hancock**

Owens-Illinois Glass Co., Toledo, recently announced the appointment of Peter W. Hancock as a vice-president. Mr. Hancock has been the firm's controller since 1918 and will continue to hold that post. He has been with Owens-Illinois since 1924.

#### ★ **Continental Names Lewis**

The election of Howard G. Lewis as vice-president in charge of Hazel-Atlas Glass Division of Continental Can Co., New York, was announced recently by Gen. Lucius D. Clay, chairman of the board. Mr. Lewis was executive vice-president of Hazel-Atlas prior to its recent merger into Continental. Mr. Lewis, who joined Hazel-Atlas in 1932, will continue to make his headquarters at the Wheeling, W. Va., unit.

#### ★ **Gair Appoints Runser**

Edward J. Runser, Jr., has been appointed special representative for container operations of Robert Gair Division of Contin-

Edward J. Runser, Jr.



ental Can Co., New York, it was announced recently by Charles U. Harvey, general sales manager of container operations. Prior to joining Gair, Mr. Runser was chief packaging design engineer for the Erie, Pa., works of General Electric Co., Schenectady, N. Y.

#### ★ **New "Scotchpak" Folder**

A new six-page foldout brochure, describing specifications and typical uses of both "Scotchpak" "A" and "B" brand polyester film, has been issued by Minnesota Mining and Manufacturing Co., 900 Fauquier St., St. Paul 6, Minn., it was announced recently. The folder features a chart on the physical and chemical properties and performance characteristics of the film and briefly describes its development. Color pictures illustrate the film's various applications as a protective wrapper. Copies are available on request from the company.

#### ★ **Protective Packaging Show**

A short course covering all phases of protective packaging was the highlight of the 11th annual Protective Packaging and Materials Handling Exposition held in Kiel Auditorium, St. Louis, Oct. 22-25.

The course, sponsored by the Society of Industrial Packaging and Materials Engineers, Chicago, and under the direction of Stephan W. Vasquez, Dean of the School of Commerce and Finance at the University of St. Louis, covered subjects such as "The Role of Plastic in Protective Packaging," "Protective Papers," "Shipping Containers," and "Palletization."

Another feature of the show was the protective packaging contest which drew more than 150 entries for seven classifications. The "Best of Show Award" was won by Cochran Foil Co., Louisville, for a multi-pack of rolls of aluminum foil shipped in a wire bound box.

The Society also announced that next year's exposition will be held at the Atlantic City Auditorium, Atlantic City, N. J. The dates will be announced in the near future.

# FOR EVERY AEROSOL REQUIREMENT

## There is a NEWMAN-GREEN Valve ...

NOW, you can take a big step toward increased efficiency and customer satisfaction for your aerosols by standardizing on Newman-Green valves for all your products. Advantages of these proved-performance valves include faster pressure filling, new and improved design to eliminate clogging, wide choice of colors *plus* our guarantee that every valve is tested before shipment. Steadily increasing demands for Newman-Green valves are being met by continued expansion of production facilities.

1. New valve for glass packages. Features include faster loading, trouble free design and wide choice of colors.
2. Valve for paint use only. Efficiency proved by many users.
3. General purpose valve for insecticides, deodorants, moth sprays, colognes, water repellents, shampoos and many other general aerosol uses.
4. Designed primarily for snow and paint but is being used most successfully on other formulations as well.

Our technical staff is available for consultation on your aerosol valve problems without cost or obligation to you.

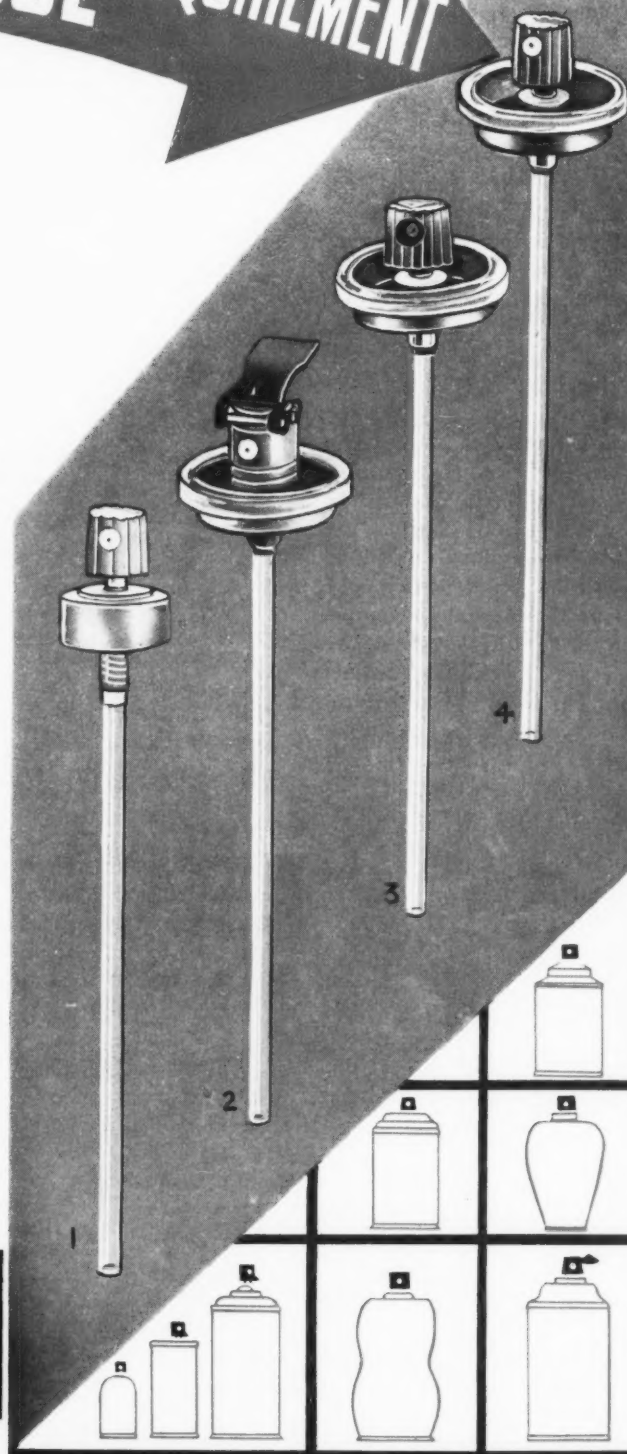
*Write today for details*

**NEWMAN-GREEN, INC.**

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**LEADING MANUFACTURERS OF AEROSOL VALVES**

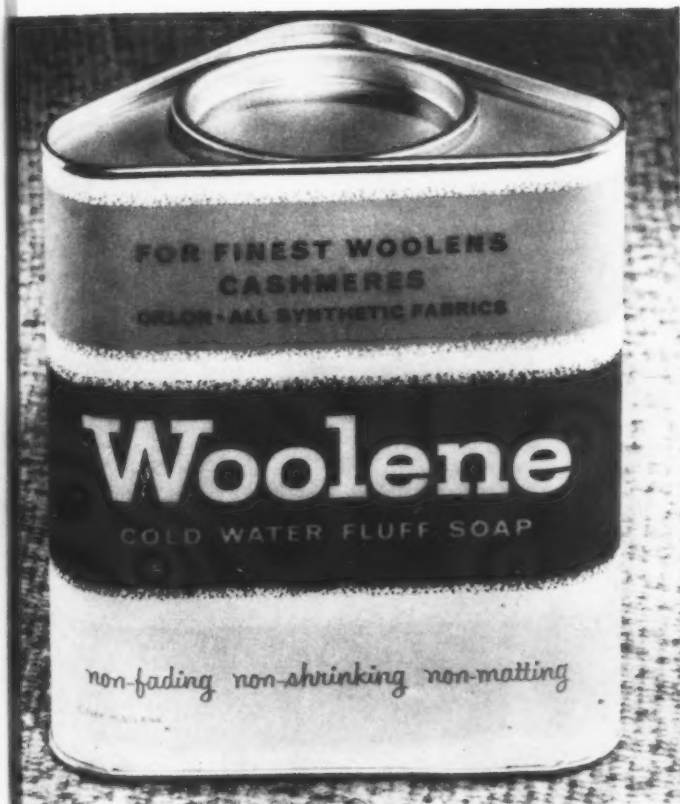




# What's New?



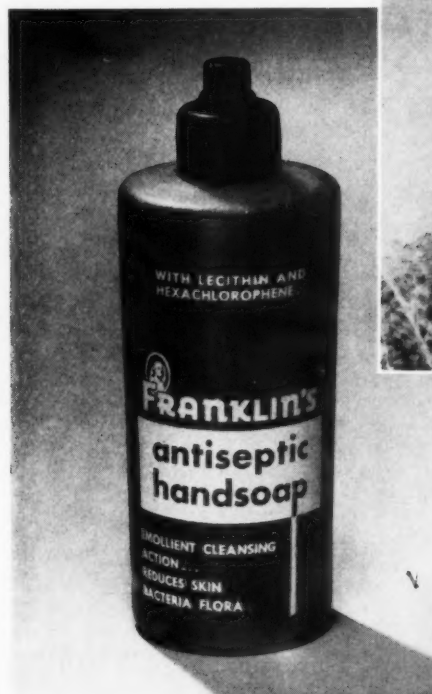
"Florient" aerosol room deodorant, in four scents was introduced recently by Colgate-Palmolive Co., New York. The product now comes in four scents—floral, spice, mint and pine. Also new is a six-ounce can, by Crown Cork & Seal, Inc., Baltimore, which features a cemented side seam that permits all-around lithography and comes in colors complementary to the individual scent. Filling is by John C. Stalford & Sons, Inc., Baltimore; Continental Filling Corp., Danville, Ill.; Peterson Filling and Packaging Co., Danville, Ill.; and Western Packaging and Filling Co., Los Angeles. Valves are by Precision Valve Corp., Yonkers, N. Y. Colgate also features the floral scent in a 12-ounce aerosol container for \$1.29.



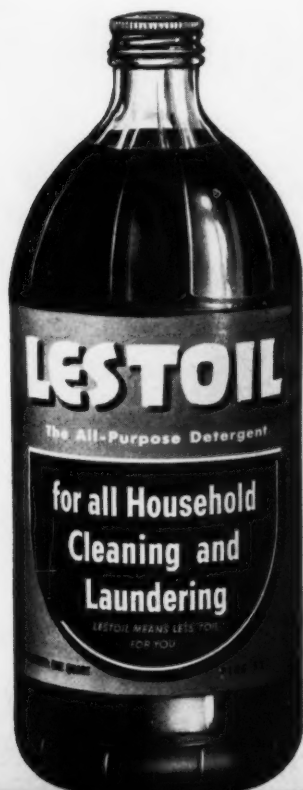
"Woolene," a new cold water fluff soap, designed for use on woolen, cotton, rayon, nylon, dacron and orlon fabrics, was introduced recently by M-O-Lens Co., Chicago. It is claimed to be non-shrinking and economical in use—one tablespoon to two gallons of cool water. The product is distributed nationally through drug, grocery, hardware, department stores. Retail price is \$1.00.

A new quart bottle, shorter in length and with side gripping features and a lifting ring at the neck, has been adopted by Parsons Ammonia Co., New York, for its "Sudsy" household ammonia. Bottles are molded by Owens-Illinois Glass Co., Toledo. Front labels are supplied by Strawberry Hill Press, Inc., Long Island City, N. Y. and back labels by Trautman-Bailey and Blampy, New York.



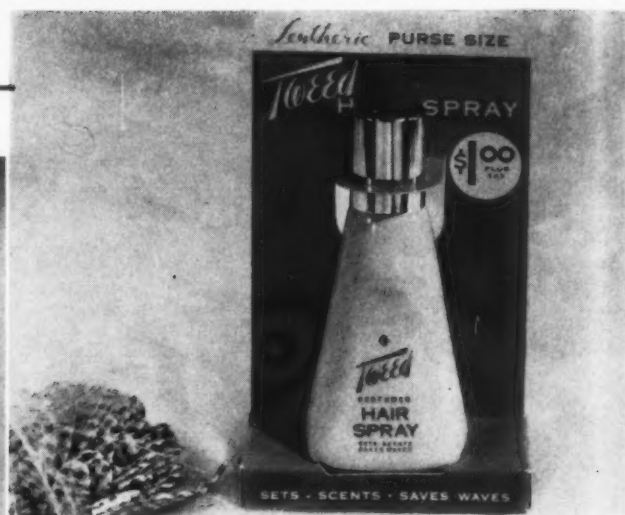


A new antiseptic, liquid hand soap, announced last month by Franklin Research Co., Philadelphia, is designed to remove grease and grime from the skin and reduce skin bacteria. It contains lecithin and hexachlorophene and is said to have dissolving and rinsing characteristics of mild detergents. It is available in a ten-ounce polyethylene plastic squeeze-type bottle by Plax Corp., Hartford, Conn.

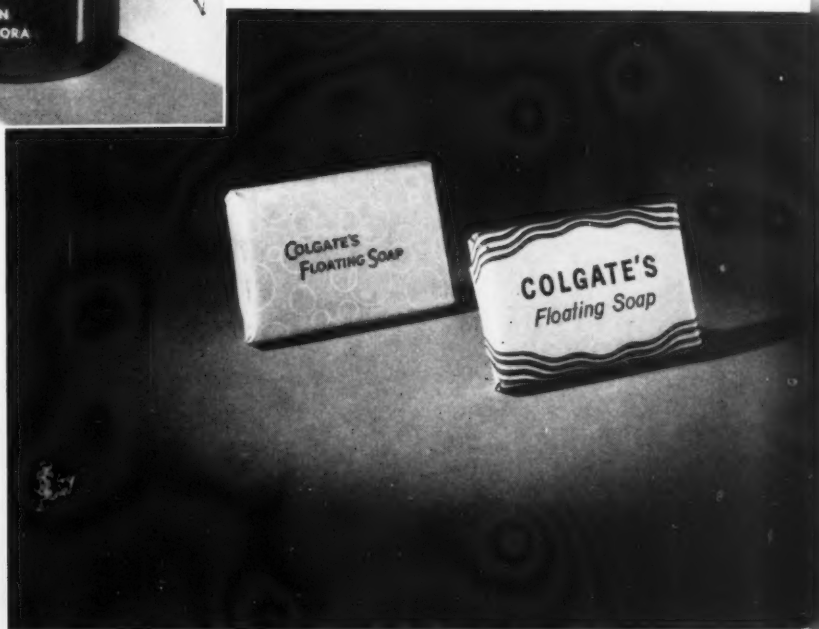


Colgate-Palmolive Co., New York, last month introduced a new wrapper for its hotel-size floating toilet soap. The one-half ounce bar now appears in white wrapper with light blue trim and navy lettering. Former wrapper is shown at left.

"Lestoil," a liquid detergent designed for industrial and household laundering, was introduced last month by Adell Chemical Co., Holyoke, Mass. It is said to remove wax, grease and newsprint from cotton, wool, silk and synthetic materials. Label is red with blue background and white lettering. Quart bottle, by Knox Glass Co., Parkers Landing, Pa., retails for 65 cents.



A new counter display stand was introduced last month by Lentheric, a division of Helene Curtis Industries, Inc., Chicago, to promote sales of its purse-size, aerosol "Tweed" hair spray. The bottle, which features a plastic, non-slip coating of aquamarine with brown lettering, sits in a cut-out cardboard base of tuchsia, black and white. A four and one-half ounce bottle retails for \$1.00. Bottles are filled by Continental Filling Co., Danville, Ill., and valves by Precision Valve Corp., Yonkers, N.Y.





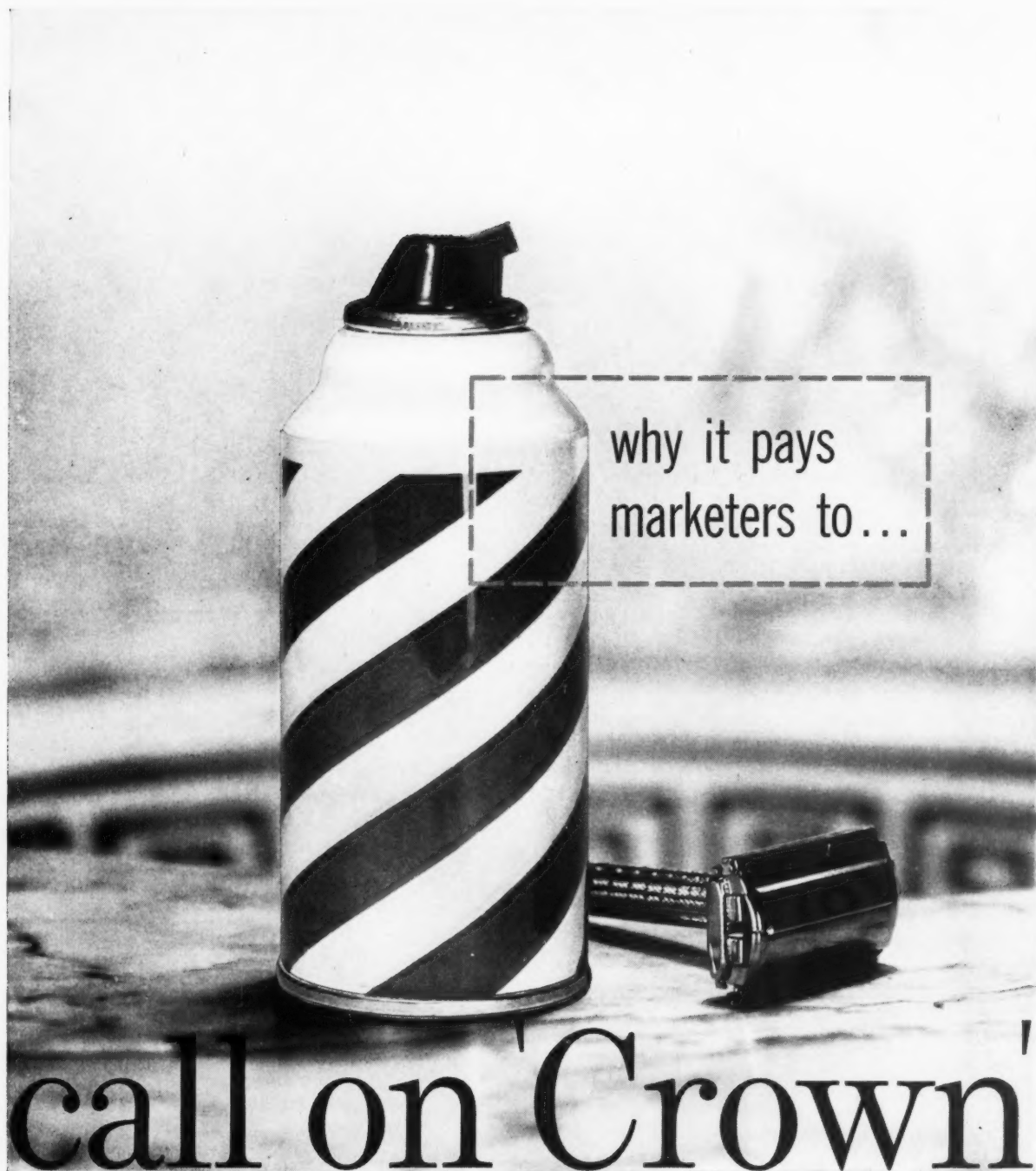
Lever Brothers Co., New York, recently announced the introduction of "Lux" toilet soap in four new pastel colors. In addition to the standard white bar wrapped in gold foil, "Lux" now appears

in pink, green, yellow and blue with matching foil wrappers. No change has been made in the soap itself. The present retail price of the white bar prevails for the colored soaps.

A new air freshener and deodorant, designed to neutralize objectionable odors such as smoke, cooking, animal and bathroom odors, was introduced last month by Orb Industries, Box 589, Media, Pa. Called "Orb Air Refresher," the product comes in spring pine, green bouquet, and clover scents, and is available in three-quarter, one and three-pound aerosol containers. Imprint space on label available for jobbers. Can by Continental Can Co., New York. The firm also has a Pyrethrin type aerosol insecticide for food plants, restaurants, etc.



"Topicort Spray," a 0.5 percent hydrocortisone, aerosol spray, designed for treatment of a wide range of common dermatoses including poison ivy and inflammation by sunburn, was announced recently by Roussel Corp., New York. Each two-second spray delivers the equivalent of 7.5 mg. of hydrocortisone, enough for treatment of an area of four square inches of skin. "Topicort" is packaged by Fluid Chemical Co., Newark, N. J., and comes in a one-half ounce plastic-coated glass bottle.



Spra-Tainer, the first "throw-away" pressure package, set new standards of design efficiency and convenience.

The extra strength of Spra-Tainer gives marketers a wider choice of propellants. Unique "no side seam—no top seam" construction permits uninterrupted inside coatings for best product protection. Crown's "wrap around" lithography gives marketers that vital extra spark at the point-of-sale.

Crown also provides authoritative facts on the adaptability of a product to pressure packaging . . . on pertinent Government and ICC regulations . . . on propellants, valves and contract loading facilities as well as the loading equipment itself.

You will find that this "one company responsibility" in pressure packaging pays real dividends when you . . . *call on Crown.*

CROWN CORK & SEAL COMPANY, INC., PHILADELPHIA 36, PENNA.



### Patterson Joins Bennett

Robert B. Patterson has joined Bennett Industries, Inc., Peotone, Ill., as sales representa-



Robert B. Patterson

tive, it was announced recently by S. A. Bennett, president. In his new post, Mr. Patterson will represent the firm's line of steel pails and drums in Texas. He will headquarter in Dallas. Mr. Patterson comes to Bennett with ten years experience in the advertising and industrial sales field.

### "Show How" Packages Sell

The package with the "show-how" picture has become the most effective instrument for sales of products sold in the "do-it-yourself" market, according to John C. Newell, Jr., marketing director of the Folding Paper Box Association of America, Chicago.

"Such packages, that sell by telling, have been made possible by new developments in printing methods, especially in paper boxes," declared Mr. Newell. "The face of the package is now the most reassuring sales force the shopper meets in a store—particularly in outlets where service has been replaced by self-selection. From bake mixes to home repair kits, do-it-yourselfers are tackling home projects they never dared undertake before. In many cases, the illustrations and directions-for-use on the side of the box are the only guide in their new ventures."

Mr. Newell added that the growing trend to impulse buying is

a basic reason why packages with sales stimulating pictures are assuming increasing importance in retailing.

"For example," he points out, "71 percent of all chain store buying decisions are made after the customer has entered the store. When hurried housewives make such on-the-spot decisions, the product with the most appealing and informative package will wind up in the shopping basket. Thus the package that gets across its sales message the quickest will likely hold its competitive position on the nation's increasingly crowded retail shelves."

### Crown Sales Higher

Net sales and income of Crown Cork & Seal, Inc., Baltimore, showed a slight increase for the first nine months of 1956, it was announced recently. Net sales for the nine month period ended Sept. 30, totaled \$88,513,717, as compared with \$85,698,403, in the corresponding period last year. Net income for the first three-quarters of 1956 increased to \$1,287,080, equal to share earnings of 72 cents, from \$1,268,003 and 71 cents, in the first nine months of 1955.

### National Sales Record

Sales and earnings of National Can Corp., Chicago, reached an all-time high for the nine month period ended Sept. 30, it was announced recently by Robert S. Solinsky, president.

Net sales for the first nine months of 1956 totaled \$63,550,204, an increase of 15 percent from \$55,139,294 in the corresponding period of 1955. Net income for the nine months ended with September increased to \$1,852,484, equal to share earnings of \$1.73, from \$717,499 and 68 cents in the first nine months of last year.

In the third quarter of 1956, National reported total sales of \$31,049,347, as compared with \$25,848,061 in the third quarter of 1955. Net income rose to \$1,372,372, or \$1.28 per share, from \$652,377, or 61 cents per share.

### Continental Names Two

The appointments of James I. Donahue as general sales manager, and Karl Weaver as manager



James I. Donahue

of manufacturing of the Hazel-Atlas Glass Division of Continental Can Co., New York, were announced recently by Lawrence Wilkinson, executive vice-president. Both men will headquarter at the division's Wheeling, W. Va., office.

Mr. Donahue joined Continental in 1923 and has since served in various sales capacities in Baltimore, Washington and New York. He was appointed sales manager of the eastern metal division in 1953.

Mr. Weaver joined Hazel-Atlas in 1922. He has served as plant manager of the firm's Ada, Okla., and Clarksburg, W. Va., plants and in 1953 was named vice-president in charge of operations at the Wheeling, W. Va., unit.

### O-I Earnings Lower

Owens-Illinois Glass Co., Toledo, recently reported a net income of \$24,254,278, equal to share earnings of \$3.97, for the 12 months ended on Sept. 30. This compares with \$27,262,353, equal to share earnings of \$4.46, in the preceding 12 months. Net sales increased to \$380,133,217 from \$365,891,468.

Net income for the third quarter of 1956 was \$6,479,759, equal to share earnings of \$1.06, on sales of \$105,188,523. A comparison with the similar period last year was not available.

**NOW! A.R.C. offers America's Finest  
MOST COMPLETE LINE  
of pressurized package valves!**



*Featuring*  
**A.R.C.'s NEW**  
**NYLON K-38 VALVES**

**For Spray, Foam and Glass Bottle Products**

Now *every* manufacturer of spray or foam aerosols in metal or glass containers — can take advantage of the research and engineering that makes A.R.C.'s K-38 Valve so outstanding! All the proven advantages of this popular valve have been incorporated in the **NEW Improved NYLON K-38 series**, headlining A.R.C.'s new fully-expanded line. You get the zip of K-38's "light touch" spray action . . . the *smartness* of K-38's clean-cut styling . . . the *strength* of K-38's outstanding construction —**plus the versatility of NYLON**—in the widest selection of internal meterings to best meet your packaging requirements. Yes, whatever your needs—see A.R.C.—before you buy *any* valve.

Send today for your complete kit of these new improved NYLON K-38 A.R.C. Test valves, and see the difference they make. Write Department M.

*Aerosol Research Company*

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ANOTHER AEROSOL

# "Package Pioneer"

by Continental Filling Corporation



This is "Jet-Spray" ... Bon Ami's First  
New National Product in 43 Years  
... Loaded by Continental Filling Corp.

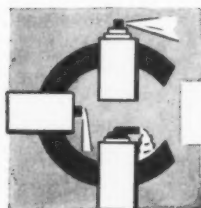
In a quarter-century of packaging and engineering, Continental Filling Corporation has helped "pioneer" hundreds of revolutionary new aerosol products for soap, chemical, cosmetic manufacturers.

This aerosol "know-how" eliminates expensive, time-consuming trial-and-error in perfecting and filling new products.

For products already being marketed Continental offers exceptional quality control methods, economy, laboratory development facilities, and well-equipped, strategically located plants.

CALL CONTINENTAL FILLING CORP. to take advantage of the best in aerosol, pressure, or liquid filling service.

A FREE BOOKLET tells the complete story. Write for your copy today.



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IMMEDIATE ACCEPTANCE

Thanks to **VCA**  
Metered Valves!



**SHULTON'S** new brilliant spray perfumes make exciting gifts . . . thanks to VCA Metered Valves.

Three more famous names have entered into the Aerosol market with new products and practically over night saw their sales volume skyrocket, thanks to VCA's sensational, exclusive Metered Valve!

If your product needs a 'lift' into a brand-new volume market the VCA Metered Valve\* may be your answer. **THE SPRAY IS MEASURED! THE RIGHT AMOUNT TO SERVE THE PURPOSE IS RELEASED! NOT ONE DROP IS WASTED!** Your customer gets full value.

**VCA is ready to help you!**

Our many years of valve design experience and exacting standards of manufacture will solve your Aerosol packaging problem. Call today, or send in your specifications for samples and prices.

\*Pressure and cold filled in glass, aluminum and other 1" opening standard containers for every formula.



Visit us at  
the CSMA  
Convention.

1720 Fairfield Ave., Bridgeport, Conn.



**CORDAY'S** famous fragrances are big hits in leakproof atomizers . . . thanks to VCA Metered Valves.



Courtesy of Modern Packaging

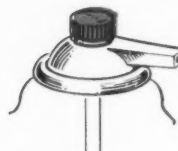
**RIKER'S** trail blazing MEDIHALER, for relief of asthma, is the first internal medicinal aerosol for oral inhalation . . . thanks to VCA Metered Valves.



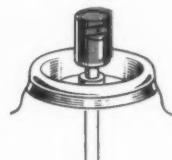
B18 — GLASS — Sensational new Metered Valve for cosmetics, pharm., etc.



B8 — GLASS — Standard, for perfumes, hair lac., cologne, etc.



B2 — FOAM — with exclusive "twist-lok" for soaps, shampoos, creams, cosmetics.



B9 — ALL BRASS or STAINLESS STEEL — with Nylon stem for hair lac., shave cream, pharm., cosmetics, etc.

FOR EVERY NEED . . . A STANDARD VCA VALVE



### Canco Sales Higher

American Can Co., New York, recently reported an increase in sales and a decline in income and earnings for the nine month period ended Sept. 30. Net sales for the first nine months of 1956 totaled \$595,327,219, an increase of 8.6 percent from \$548,112,492 in the corresponding period of 1955. Net income for the nine months ended with September amounted to \$28,243,381, equal to share earnings of \$2.38. This was 2.3 percent less than the \$28,932,161 and \$2.46, earned in the similar period of 1955.

In the third quarter of 1956, Canco reported total sales of \$247,301,971, an increase of 2.9 percent from the \$240,272,530, in the third quarter of 1955. Net income, however, dropped 8.9 percent to \$13,212,487, or \$1.13 per share, from \$14,514,489, or \$1.27 per share, in the comparable period a year ago.

—★—

### Crown Appoints Carnie

The appointment of John L. Carnie as general manager of the can division of Crown Cork & Seal, Inc., Baltimore, was announced last month by George W. Crabtree, executive vice-president. In his new position, Mr. Carnie will be responsible for the division's sales and manufacturing operations. He will make his headquarters in Philadelphia. Mr. Carnie joined Crown in 1953. He previously had been manager of manufacturing for the can division.

—★—

### Bronander Heads PMMI

W. B. Bronander, president of Scandia Manufacturing Co., North Arlington, N.J., has been elected president of the Packaging Machinery Manufacturers Institute, New York, at PMMI's annual meeting held recently at Skytop, Pa. Mr. Bronander was chairman of the Packaging Machinery & Materials Exposition committee this past year.

Other officers elected include J. H. Richmond, president of Potdevin Machine Co., Teterboro, N.J., first vice-president; E. J. Ab-

endschein, vice-president of Chisholm-Ryder Co., Hanover, Pa., second vice-president; K.B. Hollidge,



W. B. Bronander

executive vice-president of Arthur Colton Co., Detroit, third vice-president and chairman of the Packaging Machinery & Materials Exposition committee.

The retiring president, Tom Miller, vice-president of Package Machinery Co., Springfield, Mass., was elected as an ex-officio member of the board of directors for a two year term.

Elected to the board of directors were Charles R. Barr, president of F. B. Redington Co., Bellwood, Ill.; Boyd H. Redner, president of Battle Creek Packaging Machines, Inc., Battle Creek, Mich.; H. Lyle Greene, president of Peters Machinery Co., Chicago; A. R. Stevens, vice-president of Elgin Manufacturing Co., Elgin, Ill.; and W. A. Scheurer, vice-president of Exact Weight Scale Co., Columbus, Ohio.

—★—

### New Aerosol Furnace Spray

A new aerosol furnace spray, designed to eliminate soot from oil, gas or coal heating systems, has been introduced by Stewart-Hall Chemical Corp., Mount Vernon, N. Y., it was announced recently. Called "Sootspray," the product, which is claimed to be nonflammable, nonexplosive, and harmless to metal surfaces, reduces the ignition point of the soot so that it may be destroyed by burning. It is also said to have a residual action which keeps it effective until needed in the furnace. Dispensing pressure in the aerosol container is provided by du Pont "Freon," propellant.

### Steel Container Directory

The 1956-57 edition of the directory published by the Steel Shipping Container Institute, 600 Fifth Avenue, New York 20, became available last month. Container manufacturers are listed alphabetically and products' cross reference tables are provided as well as a map showing locations of members' plants. A briefly outlined history of the industry is followed by statistical material. The industry's 80-odd plants employ about 12,000 people, consume more than one million tons of sheet steel a year, second only to the automobile industry.

Shipments of steel containers, 19 gage and heavier, 13 gallons and larger, were 24,822,000 units in 1955, compared with 22,051,000 in 1954. Sales of lighter than 20 gage, 13 gallons and larger, amounted to 9,412,000 in 1955 and 7,737,000 in 1954. Shipments of heavier than 29 gage, 12 gallons and smaller, amounted to 74,901,000 units in 1955, against 67,062,000 units in 1954. These figures were compiled by the U.S. Department of Commerce.

Broken down by industries and types of containers the industrial maintenance and janitor supplies field used the following percentages: 18 gage and heavier drums, welded liquid type, 13 gallons and larger, 0.2 percent; same type container but 19 gage and lighter (except grease), five percent; drums, grease (as such), 100 and 120 pounds, 0.2 percent; drums, light asphalt dust and caustic type, all gages, welded and lock seams, 0.9 percent; and pails, 12 gallons and smaller, 28 gage and heavier, 2.7 percent.

The section dealing with container specifications refers to regulations issued by the Interstate Commerce Commission and other regulatory bodies and to government procurement specifications. Recommended universal standards developed by the institute and consumer industries are listed and brief data on new coatings and linings are given.

# Scent Change Wins Shampoo Top Spot\*

ATLANTIC CITY, N. J.—A change in the fragrance of a shampoo used in a panel test boosted it from last place to first and, although its other properties remained the same, the panel members believed that many of its other qualities were improved as well.

This was reported by Dr. Donald H. Powers of the Warner-Lambert Pharmaceutical Co. before a symposium on perfumes, cosmetics and soaps at the national meeting of the American Chemical Society here late last month.

"In this type of panel testing," Dr. Powers explained, "the same

shampoo with improved fragrance is reported as rinsing better, lathering better and giving more luster and shine. This demonstrates a clear case where the same technical activity is reported as more effective when only the fragrance is improved."

While shampoos have built up \$120,000,000 annual sales, Dr. Powers concluded, "there are still a great many problems to be solved and many, many tests to be run before we can pre-analyze and predict the success and acceptance of a new shampoo formulation."

## Boost your sales with proper perfuming!

Your soap, aerosol, hair and toilet preparations can be assured of sales success with the proper consumer appealing fragrance.

Perry Bros. chemists with 27 years of perfume "know-how", and experience understand consumer preferences. Have the technical staff and modern facilities to create and develop a perfume compound that is technically and aesthetically correct for your product.

Tell us your requirements. Appropriate samples will be forwarded without obligation.

*"Perfection through Research"*

**perry**  
BROS. INC.

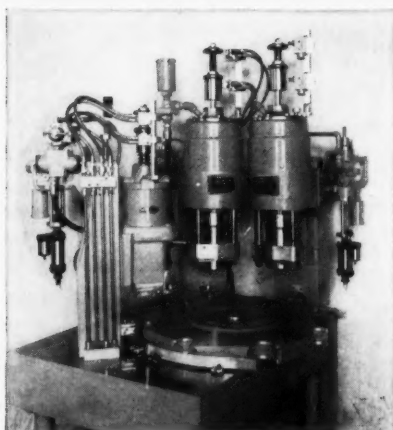
Manufacturing Perfume Chemists  
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sales offices in major cities

\* Excerpt reprinted with permission from Drug Trade News — October 8, 1956.

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Price —

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CAnal 6-5390-8

William Scheck



# NEW Trade Marks

**T**HE following trade marks were published in recent issues of the *Official Gazette* of the U. S. Patent Office in compliance with section 12 (a) of the Trade Mark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the *Gazette*. See rules 20.1 to 20.5. As provided by section 31 of the Act, a fee of \$25 must accompany notice of opposition.

**Aquid**—This for dairy equipment cleaner. Filed Nov. 10, 1955 by Diamond Alkali Co., Cleveland. Claims use since Oct. 21, 1955.

**Ever kleen**—This for upholstery and rug cleaner and industrial cleaning lotion. Filed Jan. 23, 1956 by Everkleen Products, Inc., San Francisco. Claims use since Aug. 20, 1935, on upholstery and rug cleaner.

**Breezy**—This for chrome cleaner. Filed June 22, 1955 by Great Lakes Chemical Co., Canton, O. Claims use since Apr. 1, 1952.

**Sani-Boot n Saddle**—This for shoe and leather polish. Filed Jan. 24, 1956 by Hollywood Shoe Polish, Inc., Richmond Hill, N. Y. Claims use since Feb. 25, 1955.

**Metal Show**—This for metal polish. Filed Apr. 3, 1956 by R. M. Hollingshead Corp., Camden, N. J. Claims use since Mar. 16, 1956.

**Technilube**—This for cleaner for office machines, parking meters, etc. Filed Dec. 21, 1953 by James R. London, Napa, Calif. Claims use since Oct. 14, 1952.

**Sno-Wite**—This for spray type white wall tire cleaner and restorer. Filed Aug. 23, 1955, by Windsor Lloyd Products, Inc., Wilmington, Del. Claims use since July 22, 1955.

**Barcolene**—This for glass cleaner and for cleaner in paste or powder form for walls, woodwork, floors, porcelain, etc. Filed Sept. 16, 1955 by Barcolene Co., Boston. Claims use since July 1, 1939.

**Ever-Quiet**—This for cleaner for electric contacts. Filed Nov. 28, 1955 by Chemical Electronic Engineering, Inc., Matawan, N. J. Claims use since Oct. 1, 1952.

**Idoxcin**—This for cleaning and germicidal compound used to sanitize dishes, glasses and dairy equipment. Filed Dec. 9, 1955 by Guy Rampel doing business as R. K. Laboratories, Pelham, N. Y. Claims use since Aug. 11, 1955.

**Tidy Bowl**—This for toilet bowl cleansing powder. Filed Feb. 21, 1956 by B. T. Babbitt, Inc., New York. Claims use since Feb. 3, 1956. Subject to interference with SN 12,053.

**Ella**—This for toilet soaps of all kinds. Filed March 29, 1956 by Myrurgia, S. A., Barcelona, Spain. Owner of Spanish mark 81,269, dated Nov. 20, 1930.

**N-Rich**—This for shampoo. Filed April 25, 1956 by Comfort Manufacturing Co., Chicago. Claims use since Apr. 16, 1956.

**Ty.D.Bol**—This for toilet bowl cleaner (or detergent) and room freshener. Filed July 12, 1956 by Tidy Chemical Co., Sunnyvale, Calif. Claims use since Jan. 20, 1955. Subject to interference with SN 3,069.

**Dig**—This for detergents and soaps for dishes, laundry, and general purpose cleaning. Filed July 9, 1956 by Patrick R. Gibbons Co., St. Louis, Mo. Claims use since June 1, 1948.

**Elco**—This for insecticides and rodenticides. Filed Sept. 22, 1955 by Harry Katz, doing business as Elco Manufacturing Co., Pittsburgh, Pa. Claims use since Dec. 1928.

**Geigy**—This for fungicides, insecticides, rodenticides, deodorants, germicides, surface active compounds, and synthetic waxes, etc. Filed Sept. 23, 1955 by Geigy Chemical Corp., Ardsley, N. Y. Claims use since May 13, 1942.

**Regatta**—This for shaving cream. Filed Feb. 27, 1956 by Fuller Brush Co., Hartford, Conn. Claims use since on or about Feb. 1, 1956.

**Neutralite**—This for soap base liquid neutral cleaner for use on painted walls, woodwork, furniture, and on marble, tile, terrazzo, wood and linoleum floors. Filed July 5, 1955 by Tesco Chemicals, Inc., Atlanta, Ga. Claims use since on or about March 1, 1932.

**Clenzit**—This for stain removing machine dishwashing detergent. Filed July 5, 1955 by Tesco Chemicals, Inc., Atlanta, Ga. Claims use since on or about March 1, 1932.

**Solvona**—This for dry cleaning fluid. Filed July 27, 1955 by Renuzit Home Products Co., doing business as Columbia Petroleum Products Co., Philadelphia. Claims use since May 28, 1934.

**Germ-Acite**—This for liquid concentrated chemical sanitizer and detergent for floors, walls, toilets, urinals, animal cages, garbage pails, etc. Filed Sept. 21, 1955 by World Chemical Sales Co., Jersey City, N. J. Claims use since June 24, 1954.

**Surfonic**—This for detergent for industrial purposes. Filed Feb. 1, 1956 by Jefferson Chemical Co., Houston, Tex. Claim use since Dec. 15, 1954.

**dox**—This for granulated soap. Filed May 1, 1956 by Maurice H. Hankoff, doing business as Dox Products Co., Rochester, N. Y. Claims use since March 16, 1956.

**Delta**—This for insecticide. Filed Feb. 21, 1956 by Ernest E. Reich, doing business as Delta Chemical Laboratory, New Orleans. Claims use since Aug. 29, 1955.

**Dyna-Wash**—This for all-purpose washing powder. Filed Aug. 26, 1955 by E. F. Drew & Co., New York. Claims use since Aug. 8, 1955.

**Nu-Grain**—This for paint and varnish remover. Filed Oct. 11, 1955 by Custom Paint and Chemical Co., Pennsauken, N. J. Claims use since Apr. 2, 1953.

**Twin-Solv**—This for paint, varnish, shellac, and wax removers in the form of liquid sander. Filed Nov. 3, 1955 by Custom Paint and Chemical Co., Pennsauken, N. J. Claims use since Oct. 19, 1955.

**Haemo-Sol**—This for chemical

detergent. Filed March 27, 1956 by Meinecke & Co., Millville, N. J. Claims use since Jan. 8, 1943.

**Ritz**—This for creme shampoo. Filed Apr. 6, 1956 by Charles of the Ritz, Inc., New York. Claims use since 1925.

**Sudsoap**—This for vegetable oil soap. Filed Apr. 9, 1956 by Martin-Senour Co., Chicago. Claims use since 1928.

**Cleer**—This for liquid cleaner for painted surfaces. Filed May 3, 1956 by Robert K. Pierce, doing business as Pierce Products, Jackson, Miss. Claims use since Jan. 1, 1954.

**Zud**—This for abrasive rust and stain remover for bathtubs, sinks, tile floors, auto bumpers, etc. Filed Jan. 5, 1955 by Rustain Products, Saddle River Township, N. J. Claims use since Aug. 20, 1937.

**Kitchen Klenzer**—This for cleaning and scouring preparation for household use and cleaning, scouring, and polishing metal, glass, machinery, etc. Filed March 6, 1956 by Fitzpatrick Bros., Inc., Chicago. Claims use since Feb. 1908.

**Corotran**—This for insecticide and ovicide. Filed May 11, 1955 by Pittsburgh Plate Glass Co., Pittsburgh, Pa. Claims use since March 14, 1955.

**Sparklemint**—This for dentifrice. Filed Jan. 31, 1956 by De Gon Products, Inc., Baltimore, Md. Claims use since Sept. 15, 1955.

**Mist**—This for spotting assistant in dry cleaning of fabrics. Filed May 11, 1954 by Pennsylvania Salt Manufacturing Co., Philadelphia. Claims use since March 21, 1952.

**Mitz**—This for soap filled mittens or gloves. Filed June 3, 1955 by Narva Products, Inc., New York. Claims use since April 4, 1955.

**Level**—This for cleansing and detergent compounds for dishwashing and other washing and cleansing operations. Filed Sept. 12, 1955 by Calgon, Inc., Pittsburgh, Pa. Claims use since Jan. 28, 1955.

**Detergol**—This for alcoholic potash soap. Filed Nov. 10, 1955 by Ultra Chemical Works, Inc., Paterson, N. J. Claims use since June 1930.

**Parid**—This for inhibitor, preventer, and remover of deposits of asphalt, wax, paraffin, organic materials, etc. in petroleum handling equipment. Filed Nov. 14, 1955 by Petrolite Corp., St. Louis, Mo. Claims use since April 1941.

**New Wonder**—This for garbage disposal cleaner. Filed March 1, 1956 by B & B Products Co., North Hollywood, Calif. Claims use since Feb. 1, 1956.

**Cyanatex**—This for penetrating, scouring and detergent agent for use on textile materials. Filed March 12, 1956 by American Cyanamid Co., New York. Claims use since Dec. 29, 1955.

**Lik-Wid-Plumr**—This for liquid drain pipe opening compound. Filed March 30, 1956 by Jiffie Chemical Corp., Indianapolis. Claims use since Nov. 18, 1955.

**lection**—This for liquid cleaner and polish for smooth surfaces, plain or coated. Filed March 12, 1956 by Cannon Chemical Co., Cambridge, Mass. Claims use since July 25, 1949.

**Silverfoam**—This for silver polish. Filed Apr. 12, 1956 by Demert & (Turn to Page 257)

AEROSOL IMAGINATION • AEROSOL CREATION • AEROSOL REALIZATION



# AEROSOL TECHNIQUES

INCORPORATED

EXCLUSIVELY PRIVATE LABEL MANUFACTURER OF AEROSOL  
COSMETICS, PHARMACEUTICALS AND CHEMICAL SPECIALTIES.

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## PRESSURE PACKAGING

**I**NADEQUATE labeling of many aerosol products . . . a shortcoming on which the pressurized packages certainly hold no monopoly in the consumer goods field . . . was brought to the fore last month as judges looked over some two hundred entries in the fifth annual CSMA aerosol packaging contest . . . results of which, incidentally, you'll find on pages 180-181 of this convention issue.

After packages were set up for judges' inspection, four members of the CSMA Precautionary Labeling Committee, we understand, dropped in for an examination of the products entered in the contest. Eight of the entries were withdrawn from competition at the committee's request because they not only were improperly labeled, but contained no warning to the buyer as to possible hazards involved in their handling.

But even more important, if our information is correct, was the fact that the Precautionary Labeling Committee members felt that 40 per cent of the entries left something to be desired from a labeling standpoint. That's almost every other package and if the entries in the contest represent an accurate cross section of aerosol products, it's time to take stock.

Although admittedly such precautions can be extended to absurdity, marketers should at least keep in the back of their minds the principle that directions ideally should be written so that they will be understandable, not just to themselves, but to the lowest educational level represented by potential users of the product. Where possible flammability or toxicity is involved, it's almost mandatory that that principle be followed. And, on the plus side, complete, easy to understand, directions can reduce consumer complaints and

thereby enhance buyer acceptance. The product can be the best in the world but if you don't tell the consumer how to use it properly to bring out all of the good features, and more importantly, to warn him of all possible reasonable hazards, you've fumbled the ball on an important part of the merchandising job.

**T**HE Supreme Court's recent refusal to review the findings of a lower court in the Carter-Colgate suit over alleged infringement of patents on aerosol soap formulations brings applications of hydro-

New eight ounce size for "Breck Hair Set Mist" was announced recently by John H. Breck, Inc., Springfield, Mass. Product also comes in 4½ and 11 ounce sizes. New size can is by American Can Co., New York; filler is Connecticut Chemical Research Corp., Bridgeport, and valve by Precision Valve Corp., Yonkers, N. Y. New slender can retails for \$1.65 plus tax. Laminated, gold wrap-around paper label bears four-color flower illustration. Aerosol container has pink plastic cap.



carbon propellants like butane and isobutane to the fore. At least in the aerosol shaving lather field, the switch away from liquefied fluorinated hydrocarbon propellants may be in the offing.

Gist of the court decision in Carter's favor is that any aerosol soap manufacturer or marketer using the liquefied propellants in his product must now pay a royalty to Carter, whose patent rights were broad enough to cover the range of practical aerosol shaving soap formulations as we know them today. While we don't think they've announced publicly what royalty will be charged, we hear through the grapevine that it might be five per cent of the wholesale selling price on each package. Some manufacturers or marketers, we hear, have gone along on the royalty fee but a five per cent "assessment" is big enough to make others think twice and lean to substituting hydrocarbon propellants to get around the patents.

In fact, we wonder if Carter really will gain much except a principle. If the switch to hydrocarbons becomes general, their royalty income might be "peanuts". And we'll venture an opinion that it takes a lot of royalty payments to balance out the cost of litigation in the suit they won.

**R**UMORS are that, in the shadow of the recent complaint against U. S. Packaging Corporation of Bridgeport, Conn., et al, the Federal Trade Commission is going after several more manufacturers or marketers of aerosol snows on charges of slack fill.

Aerosol snow production this year, incidentally, probably will be no higher than last-year's reported output of about seven million packages. Seems to us they've been slower coming on the market this season. The range of available colors apparently is down, too . . . one of the major marketers is offering only white, pink, and blue this season, dropping even the traditional Christmas green.



# QUESTIONS & ANSWERS ABOUT MARKETING UNDER PRESSURE WITH INDUSTRIAL SIZE TUBE MANIFOLD DISPOSABLE CONTAINERS



**Q: HOW DO TMC INDUSTRIAL SIZE CONTAINERS INCREASE SALES?**

**A:** TMC King Size Disposable Containers are giving manufacturers a new selling tool as potent for increasing industrial and commercial sales as the small can size containers have been in household the world over.

**Q: WHAT TYPICAL PRODUCTS ARE NOW SUCCESSFULLY USING TMC DISPOSABLE CONTAINERS?**

**A:** Insecticides, room deodorants, greenhouse and nursery sprays, stable and barn disinfectants, germicides, medical gases, fire extinguishers, Freon, stencil ink, etc.

**Q: HOW DO TMC DISPOSABLE CONTAINERS CUT YOUR COSTS?**

**A:** Accurate packaging by weight or volume, compact size, no deposits or refunds, no bookkeeping, no return transportation costs, no maintenance costs.

**Q: HOW CAN WE LEARN ABOUT INDUSTRIAL SIZE AEROSOL MARKETING?**

**A:** The Tube Manifold Corporation has wide experience in working with foremost manufacturers on applying TMC Disposable Containers to marketing. Write for "The Latest Thinking on Marketing Under Pressure."



**TUBE MANIFOLD**  
CORPORATION

429 Bryant Street

North Tonawanda, N. Y.

Fabricators of Tubular Products Since 1920

## Pressure Packaging

(Continued)

**S**LACK fill, by the way, isn't limited to aerosol snows. Chemical Specialties Manufacturers Assn. recently surveyed a large number of aerosol products which had been bought on the open market for use in exhibits and displays, and determined the actual amount of fill in various products. Without listing the trade name or manufacturers of the products examined, they've compiled a report that's available in limited quantities for information and guidance of fillers and marketers. Their findings indicate not all loaders are adhering to CSMA recommended fills.

Take room deodorants for example. Among 75 twelve-ounce containers examined, 24 contained 12 ounces of active ingredient-propellant and 48 had an 11-ounce fill. Two had a 10-ounce fill, while one contained only eight ounces. Among 28 six-ounce containers examined, the fill on 18 was a full six ounces; five had a 5.5 ounce fill; four contained five ounces, and the fill on one couldn't be determined.

Residual insecticides presented pretty much the same picture. Among 24 twelve-ounce containers examined, 15 contained a full 12 ounces, eight contained 11 ounces, and one contained 10 ounces. In the six-ounce containers examined, two contained the full six ounces, while two had a 5.5 ounce fill.

By CSMA resolution, a 12-ounce container of insecticide, room deodorant or aerosol snow should be filled with not less than 12 avoirdupois ounces of solution, while a six-ouncer should contain not less than six ounces.

\* \* \*

## Short Takes

**L**AATEST information on insecticide sales seems to indicate 1956 sales will not exceed 85-90 per cent of last year's total, primarily due to a poor bug year. Wholesale and retail channels are still well stocked and it's reported that many loaders have in stock for their customers not only filled cans of insecticide



# Scraping bottom for

# design ideas?

**LET MARYLAND GLASS DESIGN**

**A BLUE OR FLINT GLASS CONTAINER FOR YOUR EXCLUSIVE USE**

Sure, we make bottles and jars. But, more important to you, we design them. Our creative staff has the experience, the skill, the imagination to help you successfully redesign your old package or develop a new one. We've proved this many times.

Now we would like to prove to you that we can design a container that will sell your product. If you have a design problem, get in touch with us. No obligation, of course. Maryland Glass Corp., 2147-53 Wicomico St., Baltimore 30, Md.

**PACK TO ATTRACT IN**

**MARYLAND  
GLASS**

**BLUE OR FLINT  
JARS AND BOTTLES**

**STOCK DESIGNS**—A variety in blue or flint glass and a complete range of sizes is ready for immediate shipment.



but empty cans as well. Probable result: Reduced insecticide loading next spring.

New face in the contract loading picture: Super-Pack Corporation, York, Pa. Marketing associate: Prestige Laboratories.

Expansions: Boyle-Midway, Chicago, plans a new building for their entire aerosol loading operation, with completion slated late in 1957; also is expanding their Cranford, N. J., installation, and should have their Los Angeles plant going early in 1957. Aerosol Company, Inc., Neodesha, Kan., have begun construction which will add 50 per cent more space. Stalford Pressure-Pak, Inc., has just completed another major expansion of their Baltimore, Md., facilities.

Price increases: Can, bottle, and cover cap suppliers have all advanced prices effective November 1, as have propellant manufacturers. It was the second increase of

the year in the can field, first of 1956 for the others.

Pennsalt status: By the time this column appears, they'll be on stream . . . have been taking orders for the last several months for December 1 delivery.

New literature: Du Pont's "Kinetic" Chemicals Division has just completed an entirely new "Package for Profit" booklet that should prove to be one of the aerosol business' most helpful pieces of background information. Forty-six pages are devoted to discussions of the history and development of the aerosol package, tips on how to get into the market, how products are loaded, and, quite naturally a complete technical discussion of the properties of Du Pont's "Freon" propellants. A separate 16-page insert, designed for reprinting periodically to keep it up to date, includes a summary of laws and regulations affecting the aerosol industry, as well as lists of U. S. patents relating

to aerosols, basic literature references, suppliers of package components, contract loaders, equipment manufacturers, aerosol consultants, and overseas suppliers.

\* \* \*

**A**DVERTISING coup: Did you note Bon Ami's two page ad spread on their "Jet Spray" aerosol window cleaner in the October 15 issue of *Life*? If you didn't note the words "advertisement" in the upper corners of the spread or the slightly higher key photos, it certainly looked like an editorial feature—even the copy was written to *Life* format. It's a promotion idea that clicks because of freshness and unexpectedness . . . usually scores a high readership "noted" rating.

The Bon Ami aerosol spray, incidentally, has reportedly racked up excellent sales. Some Eastern stores, we hear, have been selling the new product as low as 49 cents. General retail price is 69 cents, with Bon Ami putting heavy ad and

## QUALITY PRODUCTS *Demand!*

### QUALITY COVER CAPS



The Complete "AEROSOL COVER CAP" Line

**West Penn Manufacturing & Supply Corp.**  
BRACKENRIDGE, PA. (Pittsburgh Dist.)

Phones — ACademy 4-5252-53

"SECURE SEAL" METAL CLOSURES

editorial promotion behind it.

\* \* \*

**T**HOUGH we haven't seen the sales figures, we'll wager that aerosol hair tint sprays spurted upward in Canada last October—thanks, indirectly, to the Junior League of Montreal. We pin our bets on a story by Zoe Bieler in the October 20 edition of *The Montreal* daily newspaper in which she took readers behind the scenes of preparations for the Junior League's "Silver Spree" fund-raising ball, held at Montreal's swank Windsor Hotel on November 2.

Casting about for unusual ideas to lend a new twist to the annual society affair, the Junior League hit on a scheme for making guests a part of the decorations. All feminine guests, whether they naturally were blondes, brunettes, or red-heads, were asked to spray their hair silver. Results were a shining example of salesmanship, with the guests going all out, not only on the tops of their heads but on costumes. Some even hired professional designers to whip up unusual creations for the colorful affair.

Comments were varied. Said one natural blonde, intrigued with her silver-gray hair: "It completely changes your personality." One young mother admitted that her nine-year-old son burst into tears when he saw her come out of the bathroom with silver hair but added that her seven-year-old son told her philosophically, "Don't worry, Mommy, your face is still young."

All of those who tried the silver hair effect, Miss Bieler reported, agreed that it has one big advantage—it gives quite a new look to a familiar dress. "With a glittering headdress and silver hair, I'll be perfectly happy in my tired last year's ball dress and so I'll save my new one for another dance," one Junior Leaguer observed.

And that, we suggest, is a powerful sales-building endorsement for aerosol hair tints. Pit the aerosol container of hair spray, price-wise, against the cost of a new gown and the aerosol should win.

## CSMA Aerosol Publicity Program

**P**LANs for a comprehensive aerosol publicity program were completed November 15 by the Aerosol Market Development and Publicity Committee of the Chemical Specialties Manufacturers Association and letters asking for subscriptions to support the program have gone out to 175 firms in the aerosol field. The program calls for the expenditure of \$50,000 to \$60,000 per year for two years. Fillers, marketers and suppliers of aerosol raw materials have been called upon to back up the program which has been under consideration for the past year.

Members of the committee which worked out the program include Fred G. Lodes, Lodes Aerosol Consultants, chairman; E. R. Lasner of Connecticut Chemical Research Corp.; E. D. Kayser of Krylon, Inc.; J. J. Tomlinson of General Chemical Division; Al S. Pero of Fluid Chemical Co.; Charles Beach of John C. Stallfort & Sons; M. J. Heffernan and Frank Zumbro of Dupont; E. P. Hay of General Aniline; Ira P. MacNair of Soap & Chemical Specialties.

The general aerosol market development and publicity program as submitted to firms in the field by the committee follows:

"The Aerosol Division of CSMA has long recognized the need for a special publicity program to stimulate aerosol market growth and to handle industry-wide public relations problems. As a result, it established the Aerosol Publicity Committee to investigate the best means of doing this. After many months of study, your Committee recommends that the following Aerosol Market Development and Publicity Program be established to benefit and serve the common interests of our members.

The primary purpose of the program is to **INCREASE THE SALE AND ACCEPTANCE OF AEROSOL PRODUCTS**. This program will be under the auspices of the Chemical Specialties Manufacturers Association with the definite approval of the Board of Governors. It will concentrate on the aerosol industry in general and is not designed to promote any specific product. This program will be directed primarily toward the sale of aerosol products at the consumer level.

To achieve the primary purpose, on a long range basis, the following are the objectives guiding this program:

1. To educate the consumer in the con-

venience, economy, and safety of aerosols, and their essentiality in modern household management.

2. To encourage the manufacturers of consumer products to work with our Aerosol Division in converting their present products into aerosol form.

3. To give information at the consumer level regarding the present availability of the many various aerosol products.

4. To help members explore new markets for aerosol consumer products.

5. To play up and promote both year round and seasonal aerosol products in every possible market.

6. To counteract unfavorable publicity.

7. To establish a central source for information on matters of publicity and industry promotion.

Your Aerosol Publicity Committee recommends that this program be conducted by an established, reputable publicity agency. Our well rounded campaign will include printed media, radio, television, motion pictures, etc., and will encompass all the tools so necessary for a successful program. In this interest, several proposals have been received and carefully reviewed by your Aerosol Publicity Committee. The publicity agency will be guided by a representative group of the CSMA Aerosol Division who have contributed to the program. This Steering Committee will determine the policies of the program and will be the advisory committee for the publicity agency.

On the basis of similar successful publicity programs which have been thoroughly investigated by your committee, it is estimated that a fund of \$50,000 to \$60,000 a year is required to guarantee the operation of this undertaking consistent with the high standards of CSMA interests. Your committee has determined that a *minimum two-year* program is essential to achieve the most satisfactory results and it should not be initiated except on this basis.

Your support is vital to the success of this program. You will find your name on the attached list of CSMA aerosol members who are being asked to subscribe to the program.

The anticipated starting date for the program is January 1, 1957 and your subscription should be received at the CSMA office by December 15, 1956."

(Signed) Fred G. Lodes, Chairman.

—★—

### U. S. Bottlers Name Reps.

U. S. Bottlers Machinery Co., Chicago, recently announced the appointment of Watts King, Oscar Calahan and John Sims as its Los Angeles sales representatives. Also named to represent the firm in San Francisco were Dwight Landreth and Wayne Hall. The company was formerly represented on the west coast by Peter D. Bowley & Associates, Los Angeles.



### New Aerosol Storage Tanks

G. Barr and Co., Chicago, custom aerosol loader, recently announced the installation of five propellant storage tanks, with a combined capacity of 380,000 pounds, at its Chicago plant. The installation, which is believed to be the largest ever made in the aerosol industry for stocking propellants, consists of two large tanks which hold 100,000 pounds of propellant and three smaller units with capacities of 60,000 pounds.

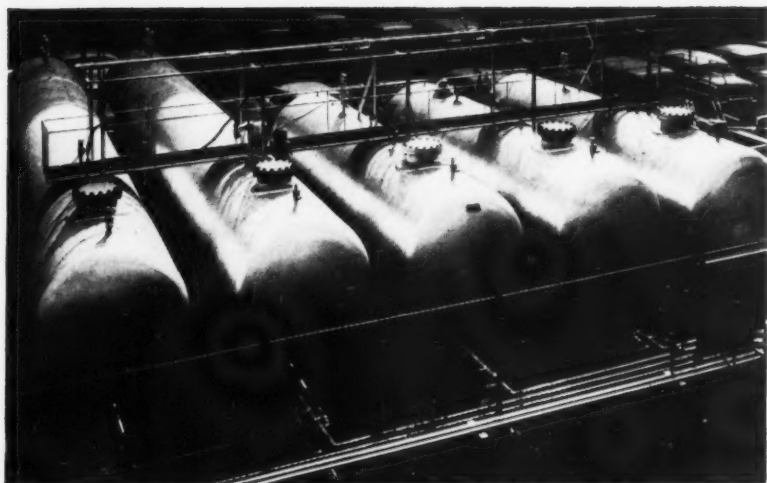
The new tanks, which are supplemented by tanks on railroad cars parked on the company's rail siding, will increase the plant's propellant storage capacity to 900,000 pounds. In addition, the new units will permit the company to keep a supply of various propellants on hand to facilitate the filling of product formulations without delay. Barr also reported that permanent propellant storage tanks have been installed at its New York and Los Angeles plants.

### Battelle Aerosol Research

Research on the basic behavior of moving aerosols has begun at Battelle Memorial Institute, Columbus, O., under a \$135,000 contract with the United States Army Medical Corps. Subjects to be studied by Battelle scientists include changes that occur in moving aerosol streams, methods of diluting moving aerosols, and accuracy and repeatability of aerosol sampling procedures. Much of the sampling to determine particle size distribution in this research will be carried out with a cascade impactor developed for Battelle by the Army Medical Corp.

### Tinted Aerosol Dip Tubes

Hydrawlik Company, 131 East 1st Ave., Roselle, N. J., recently announced that future shipments of their "Hydralene 1035-0" polyethylene aerosol dip tubing will be orchid tinted for identification purposes. According to the announcement by George A. Brown, president, the tubing is made from virgin material to close tolerances



Enough propellant to spray 47,500,000 coiffures with hair lacquer can be stored in these five aerosol propellant storage tanks. Their installation, believed to be the industry's largest, was completed early in November at the Chicago plant of G. Barr and Co., one of the nation's leading manufacturers of aerosol products. George Barr, president, said the tanks have a combined capacity of 380,000 pounds of propellant—or enough for 190,000,000 aerosol applications of topical antiseptic, or for 13,000,000 sprays of insecticide. The installation increases the plant's total storage capacity to nearly 900,000 pounds. In operation, the separate, permanent tanks enable stocking a ready-mixed supply of propellants in various combinations for filling product formulations without delay during an actual packaging "run."

and will not split or crack even with tight friction fits. The tubing is available in either cut pieces or coils in lengths up to 3000 feet.

Mr. Brown also announced that the company has acquired ten and a half acres of land on Highway 22 in the North Plainfield area for additional expansion of their facilities. The company has been located in Roselle since 1927.

In addition to polyethylene dip tubing for aerosols, the company also supplies polyethylene tubing for various types of packaging tubes.

### Bridgeport Revises Claim

Bridgeport Brass Co., Bridgeport, Conn., has agreed with the Federal Trade Commission that in claiming its mothproofer protects woollens up to a full year, it will disclose that the woollens must be re-treated after drycleaning or laundering. The FTC approved a stipulation to this effect which was negotiated by its bureau of consultation. Bridgeport emphasized that the stipulation is for settlement purposes only and does not constitute an admission by the company that it had violated the law.

### Uses New Propellant

The commercially successful use of petroleum hydrocarbons as the propellant for three-phase, low pressure aerosols was announced recently by Continental Filling Corp., Danville, Ill., aerosol loader. The use of petroleum hydrocarbons as an aerosol propellant for water based products culminates two years of cooperative research with one of its clients, Continental announced. The product is now being marketed nationally. Heretofore, fluorinated hydrocarbons were used almost exclusively as propellants in aerosols. Nitrous oxide and carbon dioxide have served as propellants for food type products such as whipped cream and soft drink concentrates.


Continental has also now completed installation of new aerosol cold filling equipment for hair lacquer in cans, and modernized its cold fill hair lacquer line for bottles.

Installation of new equipment and modernization of plant filling techniques has speeded up Continental Filling Corporation's production at plants in Hobart, Ind., and Danville, Ill.



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H. W. Hamilton, Secretary.



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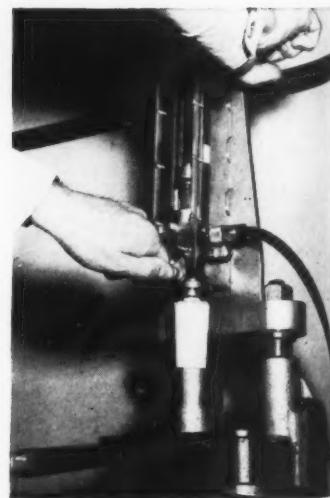
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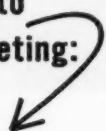
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1955 sales figures, as reported by Chemical Specialties Manufacturers Association, Inc.



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*Hair Lacquers*  
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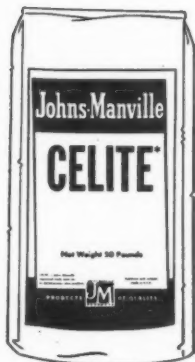


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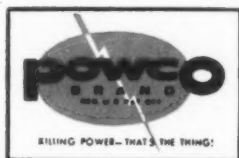
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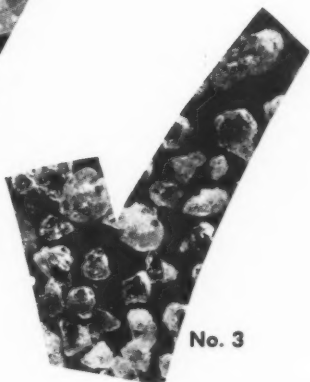
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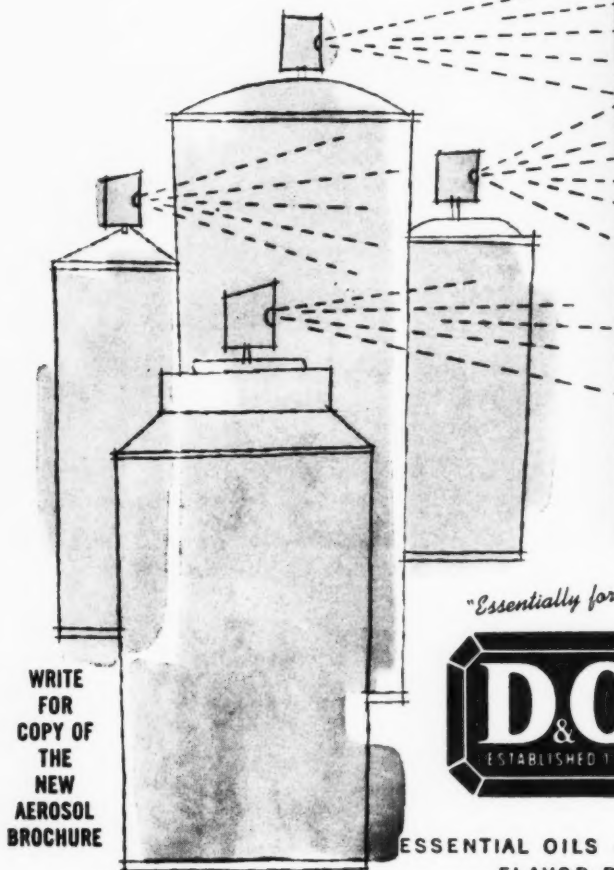
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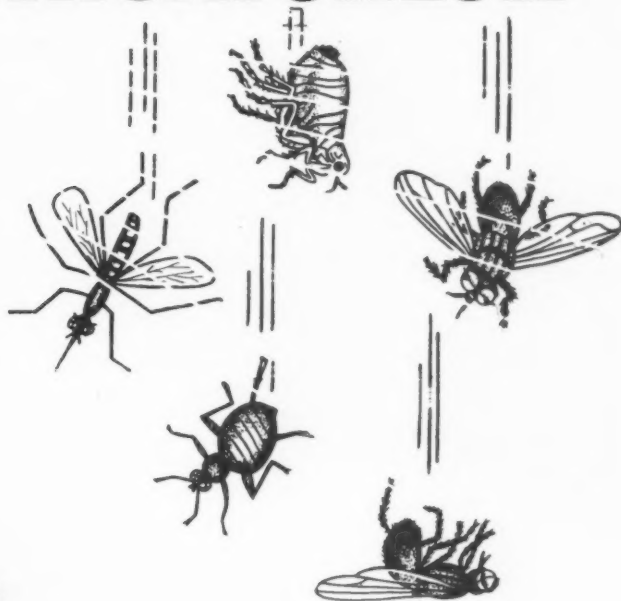


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and related beetles

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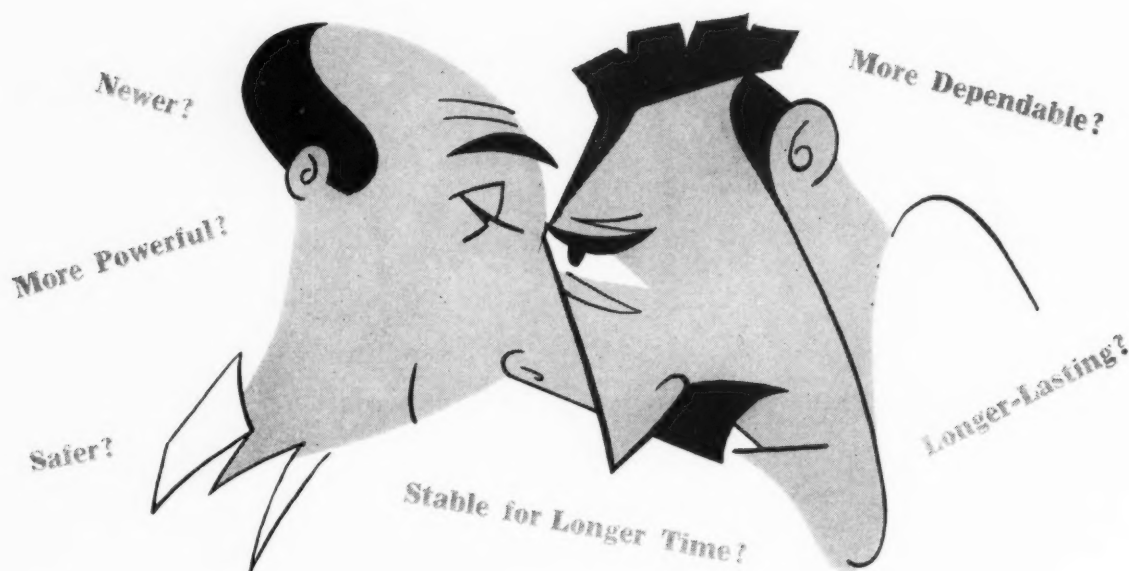
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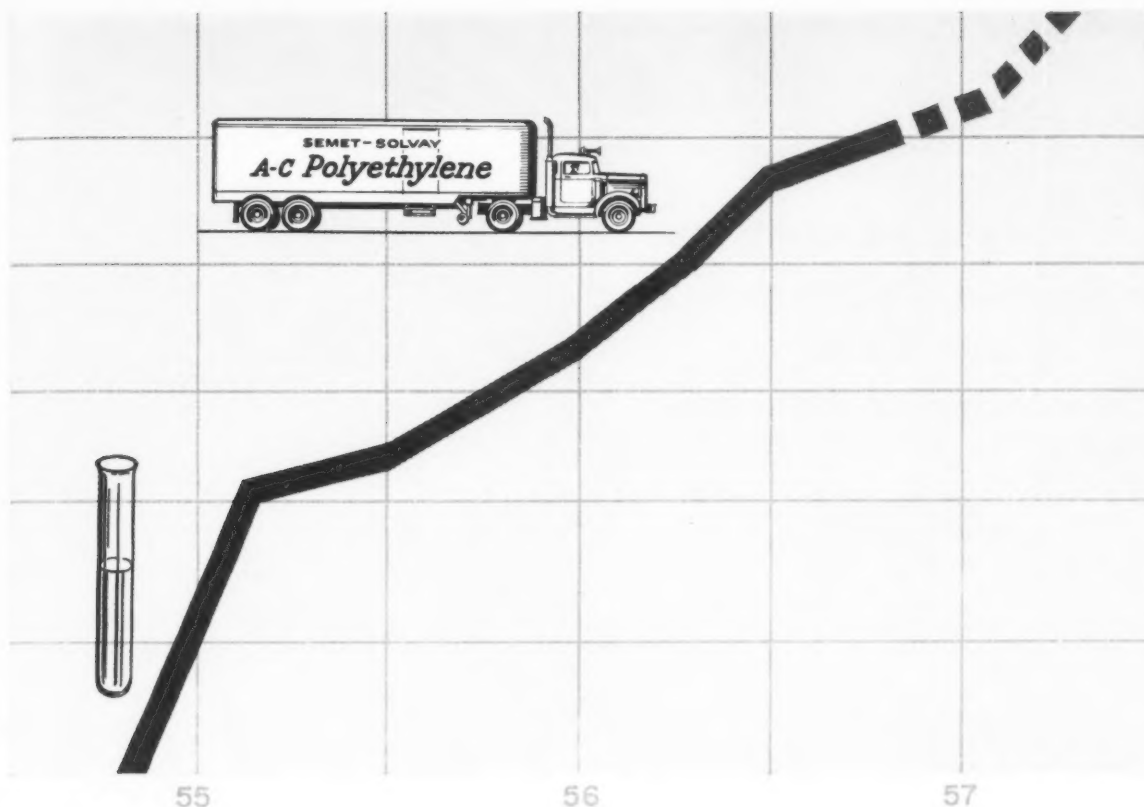
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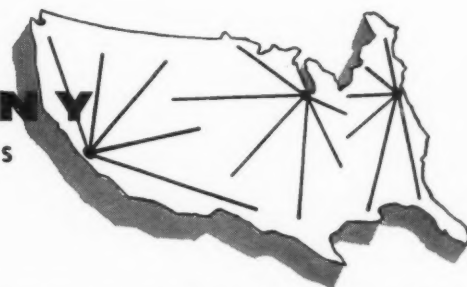
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## use **AMP** as a chemical intermediate

AMP forms substituted amides with esters, anhydrides, and acyl halides. AMP also reacts with alkyl halides, aldehydes, ketones, carbon disulfide, and many other compounds. These reactions suggest the use of AMP in the synthesis of surface-active agents, detergents, and vulcanization accelerators for rubber.

### PHYSICAL PROPERTIES

Molecular Weight	89.14
Boiling Point, at 760mm	165°C
Melting Point	30-31°C
Specific Gravity at 20/20°C	0.934
pH of 0.1M Aqueous Solution at 20°C	11.3

Solubility	Miscible with water, aromatic hydrocarbons, alcohols, esters. Insoluble in aliphatic hydrocarbons.
------------	--

### SPECIFICATIONS

Neutral Equiv.	88.5-91.0
Color, APHA, max.	20
Water, by wt., max.	0.8%
Distill. Range	156°C-177°C
Below 161°C, max.	10%
Above 168°C, max.	5%
Odor	Characteristic
Non-volatile matter by weight, max.	0.005%

### OTHER AMINOHYDROXY COMPOUNDS

AMPD (2-Amino-2-methyl-1, 3-propanediol)  
 $\text{CH}_2\text{OHC}(\text{CH}_3)\text{NH}_2\text{CH}_2\text{OH}$

AEPD (2-Amino-2-ethyl-1, 3-propanediol)  
 $\text{CH}_2\text{OHC}(\text{C}_2\text{H}_5)(\text{NH}_2)\text{CH}_2\text{OH}$

TRIS AMINO (Tris (hydroxymethyl) aminomethane)  $(\text{CH}_2\text{OH})_3\text{CNH}_2$

AB (2-Amino-1-butanol)  
 $\text{CH}_3\text{CH}_2\text{CHNH}_2\text{CH}_2\text{OH}$

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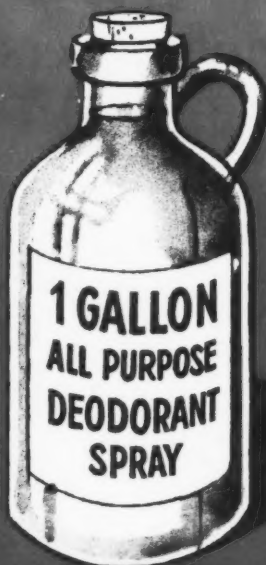
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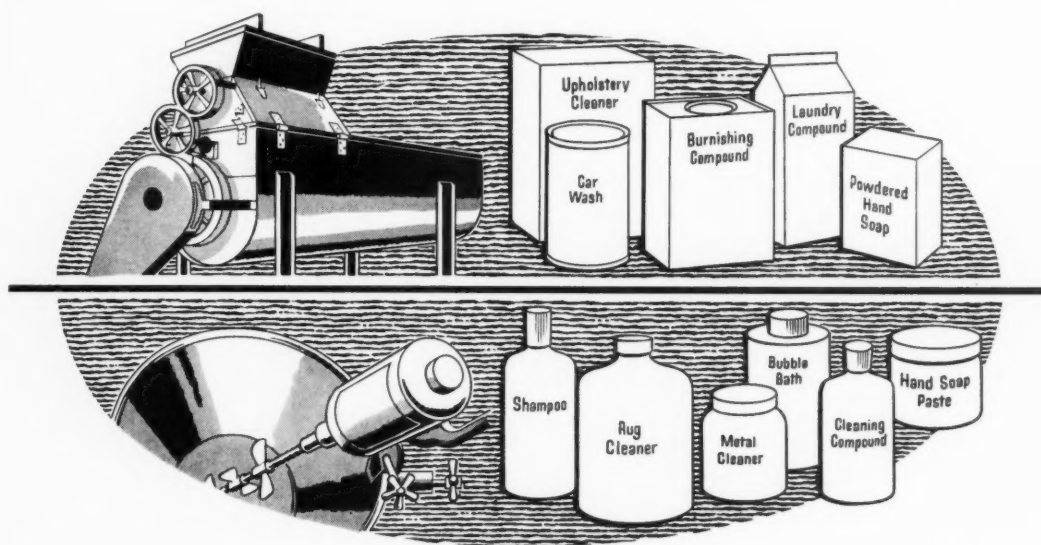
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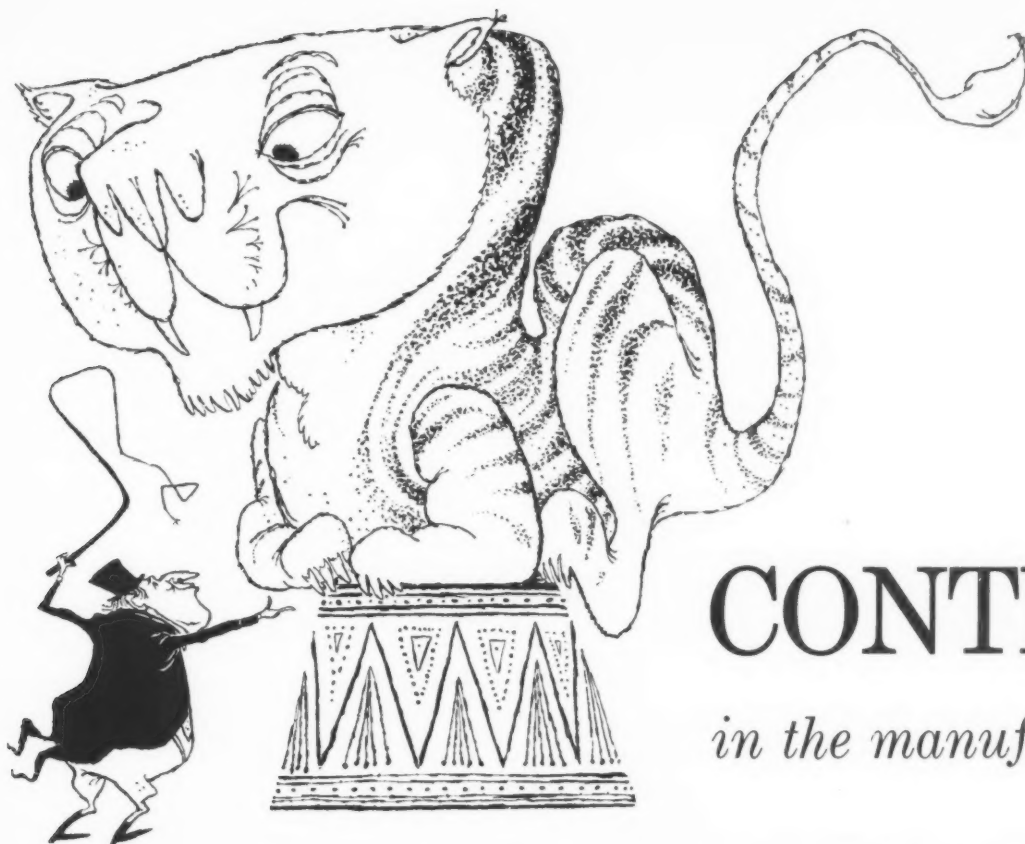
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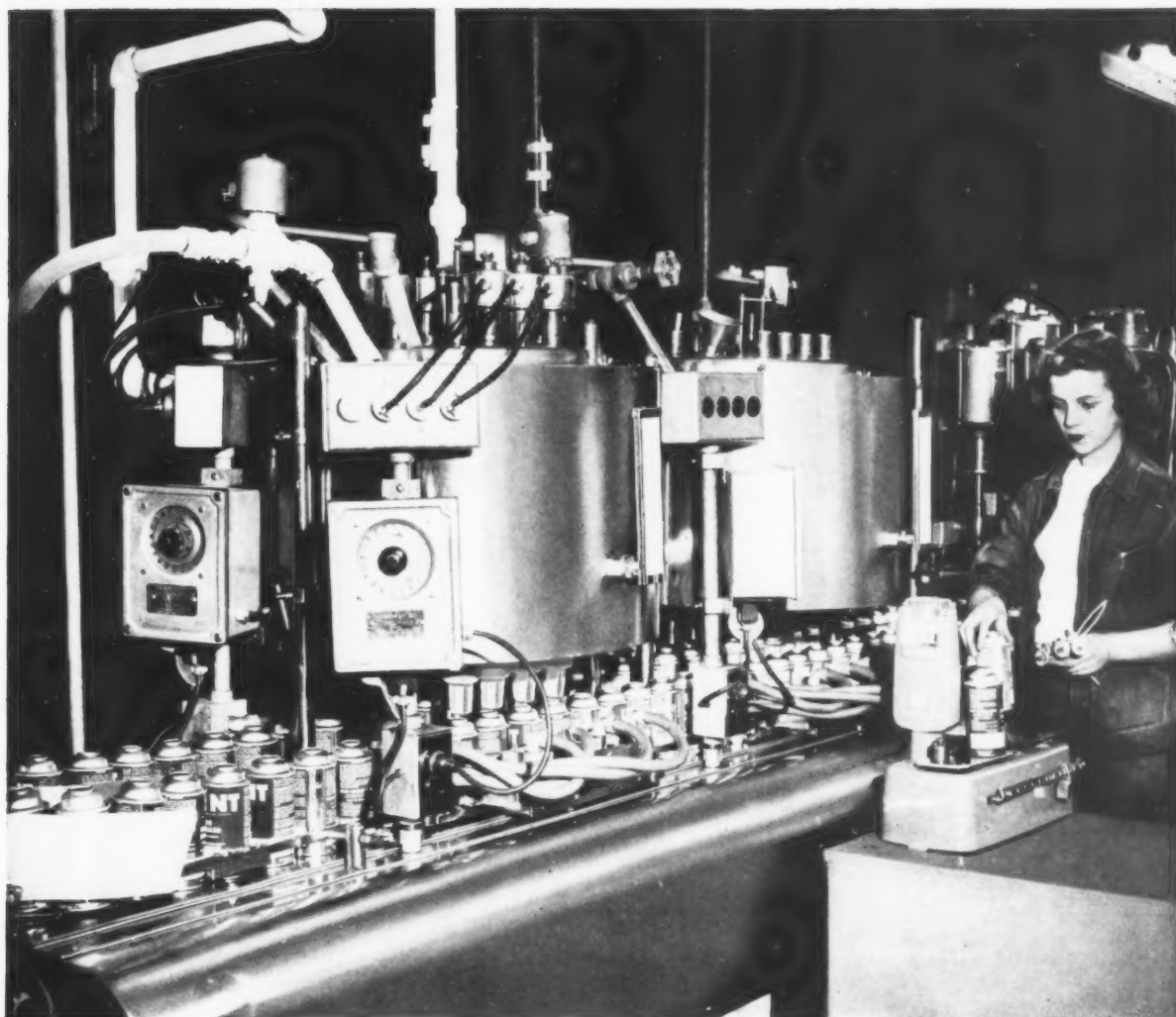
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Vinyl	Super Heavy Duty	Super Heavy Duty	Concrete	Super Heavy Duty Wax after sealing floor	Special Heavy Duty if sealed
Linoleum	Super Heavy Duty	Super Heavy Duty	Terrazzo and Hard Tile	Dilute Super Heavy Duty Wax with water (*)	Special Heavy Duty

(\*) ¼ of wax to 1 gallon of water. Mop floor after cleaned and rinsed.

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# CSMA Meets in Washington



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**H. E. Peterson,**  
First Vice-president



**James E. Ferris,**  
Second Vice-pres.



**T**HE 43rd annual convention of the Chemical Specialties Manufacturers Association, now under way at the Mayflower Hotel, Washington, D. C., consists of a two-day formal meeting, Dec. 4 and 5, preceded by a meeting of the board of governors of CSMA, held on Dec. 3.

Numerous papers and three panel discussions are being presented at the formal meeting by members of the industry and by officials of various government departments.

Four of the six divisions of which CSMA is composed held concurrent meetings during the opening session, Tuesday morning, Dec. 4. Among these the Insecticide Division featured a panel discussion by representatives of American and Canadian government officials. At the combined luncheon and general session the nominating committee made its report and the new officers and directors of the association for 1957 were elected. CSMA's achievement award was presented to Dr. George F. Reddish, professor of microbiology and public health at St. Louis College of Pharmacy and Allied Sciences and research consultant for James Varley & Sons,

St. Louis, Mo. The winners of the 1956 Aerosol Package Contest also received their plaques at this session.

In the afternoon of Dec. 4 the Aerosol Division and Disinfectant and Sanitizers Division will hold simultaneous meetings. These are to be followed by a motion picture program and the company open house period from six to nine p. m.

A general session on Wednesday morning, Dec. 5, is highlighted by the address of CSMA president, Dr. E. G. Klarmann of Lehn & Fink Products Corp. Reports by the association officers are scheduled to follow Dr. Klarmann's speech. A guest speaker from du Pont is to give a talk on "The Magic Barrel" and Walter Harrison Smith of Walter Harrison Smith Productions, New York will discuss "Advertising with the Help of Motion Pictures."

Wednesday's luncheon will be presided over by James E. Ferris of Hooker Electrochemical Co., Niagara Falls, N. Y., second vice-president of CSMA.

All six divisions will be in session on Wednesday afternoon, Dec. 5. A cocktail party, banquet

**Peter C. Reilly,**  
Treasurer



**H. W. Hamilton,**  
Secretary



and entertainment will conclude the meeting.

All entries, including winners, of the Aerosol Packaging Con-

test are on display during the meeting.

## Program for the 43rd Annual Meeting Chemical Specialties Manufacturers Assn., Mayflower Hotel, Washington, D.C., Tuesday, Wednesday, Dec. 4 & 5

### Tuesday Morning, Dec. 4 Automotive Division — Panamerican Room

Harold G. Lederer, presiding

- 9:00 A.M.  
M-1 Address of Division Chairman, Harold G. Lederer, R. M. Hollingshead Corp., Camden, N. J.  
M-2 "Fundamental Conception of Automotive Antifreeze," by John Ondrejcn, Polychemicals Department, E. I. du Pont de Nemours & Co., Wilmington, Del.  
M-3 "Silicones in Wax Formulations," by Richard Gergle, Dow Corning Corp., Midland, Mich.  
M-4 "Effect of Moisture on Brake Fluids," by G. F. Sharrard and D. H. Hanson, R. M. Hollingshead Corp. Delivered by G. F. Sharrard.  
M-5 "Importance of Heavy Duty Brake Fluids to Safe Motoring," by Francis J. Markey, Moraine Products Division, General Motors Corp., Dayton.  
M-6 Reports of Committees.

### Insecticide Division — East Room

Carlos Kampmeier, presiding

- 9:00 A.M.  
I-1 Address of Division Chairman, Carlos Kampmeier, Rohm & Haas Co., Philadelphia.  
I-2 Panel Discussion "Answers to Labeling, Regulatory, and Toxicological Problems with Insecticides," moderator E. J. Campau, Standard Oil Co. (Indiana), Chicago.  
a. W. G. Reed, Pesticide Regulation Service, U. S. Department of Agriculture, Washington, D. C.; b. S. C. Billings, Pesticide Regulation Service, U.S.D.A.; c. W. B. Rankin, Bureau of Biological and Physical Sciences, Food and Drug Administration, Washington, D. C.; and d. C. H. Jefferson, Department of Agriculture, Production Service, Plant Products Division, Ottawa, Canada.

### Soaps, Detergents, and Sanitary Products Division — Chinese Room

James M. Cloney, presiding

- 9:00 A.M.  
S-1 Address of Division Chairman, James M. Cloney, General Aniline & Film Corp., New York.  
S-2 "Abrasion Characteristics of Household Cleaners," by C. A. Gerardi, U.S. Testing Co., Hoboken, N. J.  
S-3 "Some Properties of Lauryl Ether Sulfates, Part II," by Richard R. Egan, M. J. Warren, and Leo Galitzin, American Alcolac Corp., Baltimore. Delivered by R. Egan.  
S-4 "Formulation and Evaluation of Heavy Duty Liquid Detergents," by F. E. Woodward and R. F. Griffo, Antara Chemical Sales Division, General Aniline & Film Corp., New York. Delivered by F. E. Woodward.

- S-5 "Hydrolytic Degradation of Sodium and Potassium Polyphosphates in Liquid All-Purpose Formulations," by W. B. Bennet and R. L. Liss, Monsanto Chemical Co., St. Louis, Mo. Delivered by W. B. Bennet.

### Waxes and Floor Finishes Division — Williamsburg Room

H. J. Mellan, presiding

- 9:00 A.M.  
W-1 Address of Division Chairman, H. J. Mellan, Durez Plastics Division of Hooker Electrochemicals Co., North Tonawanda, N. Y.  
W-2 Panel Discussion: "The Consumer's Viewpoint," a. "New Trends in Floor Maintenance," by Albert J. Burner, New York Port of Authority; b. "The Consumers Viewpoint," by William Joy, American Telephone and Telegraph Co., New York; c. Charles A. Peters, Public Buildings Service, General Services Administration, Washington, D. C.; d. Daniel Fraad, Jr., Allied Maintenance Corp., New York; e. "The Insurance Interest as Part of the Consumer's Viewpoint," by Ruel C. Stratton and H. W. Rapp, Travelers Insurance Co., Hartford, Conn. Delivered by H. W. Rapp; f. Miss Jane Cornish, Good Housekeeping Institute, New York; g. Report of the Scientific Committee by Donald E. Whyte, S. C. Johnson & Son, Inc., Racine, Wis.

### Tuesday Afternoon, Dec. 4

12:30 P.M. Luncheon—Ball Room.

### General Session — East Room

E. G. Klarmann, presiding

- G-1 Report of Nominating Committee, election of officers and board members for 1957  
G-2 Presentation of Achievement Award  
G-3 Presentation of Package Contest Awards to Winners

### Aerosol Division — East Room

Charles E. Beach, presiding

- 2:30 P.M.  
A-1 Address of Division Chairman, Charles E. Beach, John C. Stallert & Sons, Inc., Baltimore.  
A-2 "Review of Scientific Committee Activities," by W. E. Baulieu, Bridgeport Brass Co., Bridgeport, Conn.  
A-3 "Insecticidal Performance of Strobane Aerosols as a Function of Particle Size and Formulation of Spray," by John C. McCool, B. F. Goodrich Research Center, Brecksville, O.  
A-4 "Analysis of Aerosol Constituents," by Morris Root and M. J. Maury, G. Barr & Co., Chicago. Delivered by M. Root.



- A-5 "Water-Based Aerosols," by Lee D. Callans, General Chemical Division, Allied Chemical & Dye Corp., New York.

## Disinfectants and Sanitizers Division — Williamsburg Room

**A. G. Bowers, presiding**

- 2:00 P.M.  
D-1 Address of Division Chairman, A. G. Bowers, Hunt Manufacturing Co., Cleveland.  
D-2 Panel Discussion "Emergency Disinfection and Decontamination," Introductory remarks by Saul Kaye, Ben Venue Laboratories, Inc., Bedford, O.  
a. "Civil Defense and Health Hazards in Emergencies," by John H. Whitney, National Headquarters of Federal Civil Defense Administration, Battle Creek, Mich.; b. "Decontamination Problems Encountered in Disasters," by Milton J. Foter and Robert Angelotti, Robert A. Taft Sanitary Engineering Center, U. S. Public Health Service, Cincinnati. Delivered by M. J. Foter; c. "Some Comments on Food and Drug Protection and Sanitation in Emergencies," by Glenn G. Slocum, Division of Microbiology of the Food and Drug Administration, Washington, D. C.; d. "Use of Semi-Trailer Vans as Mobile Decontamination Chambers for Foodstuffs," by B. F. Surkiewicz, D. R. Spiner, Saul Kaye, and Benjamin Warshowsky, Decontamination Branch, U. S. Army Biological Warfare Laboratories, Fort Detrick, Md. Delivered by B. Warshowsky; e. "Biological Decontamination of Military Vehicles," by Clifford Spendlove, Dugway Proving Grounds, U. S. Army Chemical Corps, Dugway, Utah; f. "Removal and Inactivation of Chemical, Biological, and Radioactive Agents," by Harry N. Lowe, Jr., and Don C. Lindsten, Sanitary Engineering Department, U. S. Army Engineer, Research and Development Laboratories, Fort Belvoir, Va. Delivered by D. C. Lindsten.  
Motion Pictures—Chinese Room.
- 2:30 P.M.  
"Open Line to the Clouds," General Electric Co.  
"Bright Future," General Electric Co.  
"The Rival World," Shell Chemical Co.  
"First a Physician."

## Tuesday Evening, Dec. 4

**Company Open House — 5:30 to 9:00 P.M.**

## Wednesday Morning, Dec. 5

**General Session — Ball Room**

**H. E. Peterson, presiding**

- 10:00 A.M.  
G-4 Address of the president, Dr. E. G. Klarmann, Lehn & Fink Products Corp., New York.  
G-5 Report of the secretary, H. W. Hamilton.  
G-6 Report of the treasurer, Peter C. Reilly, Reilly Tar and Chemical Corp., Indianapolis.  
G-7 Report of the general counsel, John D. Conner, Washington, D. C.  
G-8 "The Magic Barrel," by a speaker from the Petroleum Chemicals Department of E. I. du Pont de Nemours & Co.  
G-9 "Publicity with the Aid of Motion Pictures," by Walter Harrison Smith, Walter Harrison Smith Productions, New York.

## Wednesday Afternoon, Dec. 5

12:30 P.M. Luncheon—Ball Room.

**James E. Ferris, presiding**

## Joint Session: Aerosol and Automotive Divisions — Chinese Room

**H. G. Mackintosh and A. J. Coulter, presiding**

- 2:25 P.M.  
AM-1 "Pressurized Packages for Automotive Use," by J. M. Kimmel, DeMart & Dougherty, Inc., Chicago.

- AM-2 "Du Pont Survey on Aerosols," by R. A. Crane, manager of market research, E. I. du Pont de Nemours & Co.

- AM-3 "Fragrance in Aerosols," by A. Dingfelder, Felton Chemical Co., Brooklyn, N. Y.

- AM-4 "Versatility of Chlorothene in Aerosols," by J. W. Barber, Dow Chemical Co., Midland, Mich.

- AM-5 "Container Storage Testing," by George Curtis, American Can Co., New York.

## Joint Session: Soaps, Detergents and Sanitary Products and Disinfectants and Sanitizers Divisions — Panamerican Room

**Clarence L. Weirich and Irving Gaines, presiding**

2:25 P.M.

- DS-1 "Cationic Softeners," by Paul L. Du Brow and Warner M. Linfield, Armour & Co., Chicago. Delivered by Paul L. Du Brow.

- DS-2 "The Use of Quaternary Ammonium Compounds in the Dairy Industry as Influenced by the Revised Appendix F of the Milk Ordinance and Code of the United States Public Health Service," by Myron W. Cucci, Milk Plant Specialties Corp., Rochester, N. Y.

## Insecticide Division — Williamsburg Room

2:25 P.M.

- I-3 "Some Aspects of Commercial Insecticide Testing," by George S. Kido, Wisconsin Alumni Research Foundation, Madison, Wis.

- I-4 "The Use of Radioactive Materials in the Studies of the Mode of Action of Insecticides," by Richard W. Fay, U.S. Public Health Service, Savannah, Ga.

- I-5 "Attractants and Repellents," by V. G. Dethier, Johns Hopkins University, Baltimore.

- I-6 "3,4-Methylenedioxypheyl Acetals as Synergists for Pyrethrins and Allethrin Against Houseflies and Cockroaches," by John H. Fales, Morton Beroza, and O. Bodenstein, U.S. Department of Agriculture, Washington, D. C.

## Waxes and Floor Finishes Division — East Room

**Donald B. Peck, presiding**

2:25 P.M.

- W-3 "Progress Report—Floor Finishes, Water Emulsion, Non-Bufferable," by James B. Snider, chief, commodity section, Standardization Division, Federal Supply Service, Washington, D. C.

- W-4 "Some of the Certainties and Uncertainties of the Patent Law," by Walter Newcomb, Paul & Paul, Philadelphia.

- W-5 "Optimum Performance of Wax Filters," by T. M. Jackson, Jr., Johns Manville Corp., Celite Division, New York.

- W-6 "Resins for Use in Resin Finishes," by Charles O'Connor, Shanco Plastics & Chemicals, Inc., Tonawanda, N. Y.

- W-7 "Statistical Analysis of Dura Versus James Coefficient of Friction Measurement," by Bernard Berkeley, Foster D. Snell, Inc., New York.

- W-8 "A Practical Approach to Compounding Floor Finishes Containing Polymer Emulsions," by Roland M. Avery, Jr., UBS Laboratories, Inc., Cambridge, Mass.

## Wednesday Evening, Dec. 5

6:00 P.M. Reception and cocktail party—Chinese Room.

7:30 P.M. Informal Banquet and entertainment.

# Aerosol Package Contest Winners

**Photograph of Grand Prize Winner  
appears on page 109 of this issue**

**Glass and Plastics:** "Angelique Black Satin"  
spray cologne of Angelique & Co., Wilton, Conn.



**Judges:** (left to right): Donald Deskey, Donald Deskey Associates, New York; Edward Molyneux, art director, Cunningham & Walsh, New York; Julien Elfenbein, editor Housewares magazine, New York; Antoinette Donnelly, beauty editor, New York News, and John A. Warren, American Management Association, New York.



**Shave Products:** "Rex" witch hazel shaving cream, product of Rexall Drug Company, Los Angeles.

**Miscellaneous Household Products:** "Bib" window cleaner, Product of Societe Elekal, Paris, France.

**G**RAND award winner in the 1956 Aerosol Package Contest went to the household room deodorant and air spray, "Air Spray" by Lactopine, entered by Swiss Pine Importing Co., New York. Out of 200 products entered from all parts of the world in this annual aerosol package competition sponsored by the Chemical Specialties Manufacturers Association, which is holding its 43rd annual convention in Washington. Selected as the best aerosol package of the year by a board of five judges, the Swiss Pine product won first prize in the room deodor-



**Hair Preparations:** "Matinee" hair spray with lanolin, Scent De Paris Co., Toronto  
**Paints, Enamels, etc.:** "Krylon Spray Enamel," Krylon, Inc., Norristown, Penna.

**Snow:** "Christmas Snow," product of Robert J. Kerr Chemicals, Inc., Park Ridge, Ill.  
**Insecticides:** "Mothproofing," product of Avon Products, Inc., New York City.

**Miscellaneous Personal Products:** "Tartan" suntan foam, McKesson & Robbins.  
**Industrial Products:** "Easy Way Plastic Spray," East-Way Prods. Corp., Cleveland.

ant classification as well as the grand prize.

The award winners received plaques during the first general session of the annual CSMA meeting in Washington, D. C., Dec. 4, immediately following a group luncheon on the first day of the two-day meeting. The judging took place in New York City on Nov. 13.

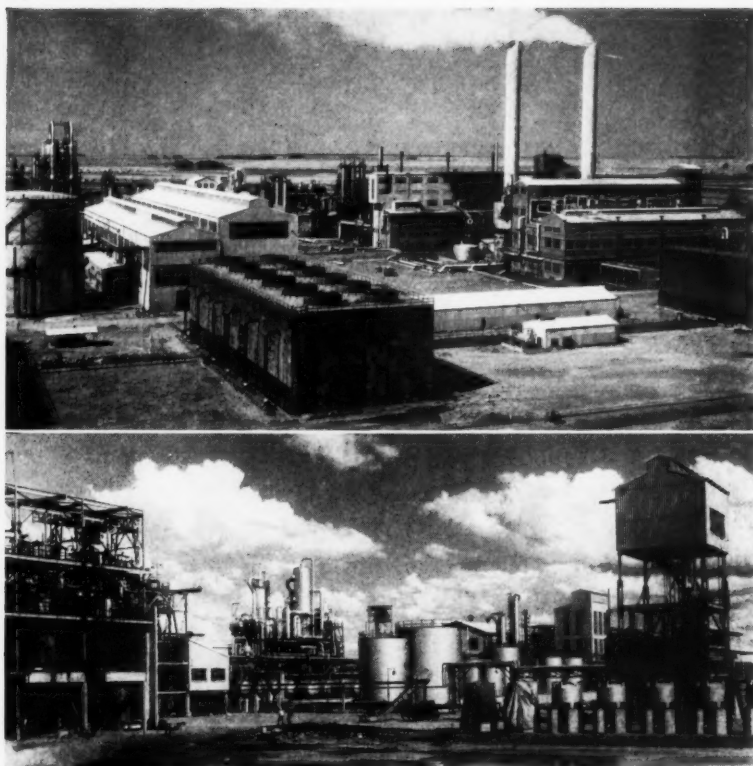
Winners in nine other various classifications included: Insecticides, "Mothproofing," a moth spray by Avon Products, Inc., New York; Paints and Enamels, "Krylon Spray Enamel," a spray enamel by Krylon, Inc., Norristown, Pa.; House-

hold Products, "Bib," a window cleaner by Societe Elekal, Paris, France; Shaving Cream, "Rex" witch hazel shaving cream of Rex-all Drug Co., Los Angeles; Hair Preparations, "Matinee" hair spray with cologne, produced by Scent DeParis, Toronto, Canada; Personal Products, "Tartan" suntan foam, a sun tan lotion by McKesson & Robbins, Inc., Fairfield, Conn.; Artificial Snows, "Christmas Snow," by Robert J. Kerr, Chemicals, Inc., Park Ridge, Ill.; Industrial Products, "Easy Spray" plastic spray, Easy-Way Products Corp., a division of Plasti-Kote,

Inc., Cleveland, O.; Glass and Plastic Aerosols, "Angelique Black Satin Spray Cologne," a perfume spray by Angelique & Co., Wilton, Conn.

The CSMA committee in charge of the competition included Fred Lodes, Lodes Aerosol Consultants, Inc., New York, chairman; Ira P. MacNair, Soap & Chemical Specialties, New York, and Joseph Tomlinson, General Chemical Division, Allied Chemical & Dye Corp., New York.

All of the packages entered in the competition are on display at the Mayflower Hotel.



Top photograph is overall view of Sasol plant in Johannesburg, S. Africa. Lower photograph is view of the section of the Sasol wax refinery.

## Wax from

**New Fischer-Tropsch  
Made in Johannesburg**

**T**HE wax industry has shown a marked tendency towards synthetic additives in the past decade. The "I.G. Waxes" were the first such products to appear, before World War II. Polyethylene's impact in 1947 was sudden and far-reaching, revolutionizing many wax-coating techniques. "Krupp" Fischer-Tropsch waxes have since entered the field and gained wide interest.

Now a new wax, made by the Fischer Tropsch process, is about to appear on the American scene. "Paraffint" is shipped to this country in bulk from a plant near Johannesburg, South Africa. Made by the South African Coal Oil & Gas Corp., generally known as SASOL, the wax is imported into the United States and marketed exclusively here by Moore & Munger, New York.

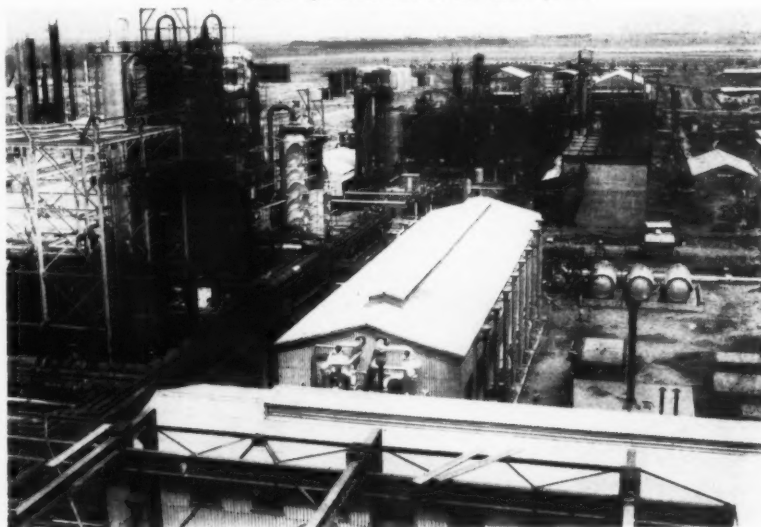
The SASOL plant is a \$100,000,000 refinery built above large coal deposits in the middle of the African veldt. The Fischer-Tropsch

process employed in this plant uses coal, water and air to produce gasoline, diesel oil, fuel oil, and a wax fraction. With South Africa devoid of natural petroleum, all fractions except the wax are absorbed by the domestic economy. The annual capacity of 14,000 tons of paraffin wax

greatly exceed South African needs and the development of "Paraffint" to create an outlet in the United States was undertaken by Moore & Munger.

"Paraffint's" foremost advantage over other similar products is its low price. Coal from Sasol's rich

German synthesis unit at the Sasol plant.





# South Africa

**Type Wax, "Parafflint,"**  
now available in U. S.



American synthesis unit at the Sasol plant in Johannesburg.

load; at 17 cents in one ton and less than five ton lots; and at 20 cents per pound in less than one ton lots.

Physically similar to F-T waxes produced in Germany, "Parafflint" is essentially a mixture of

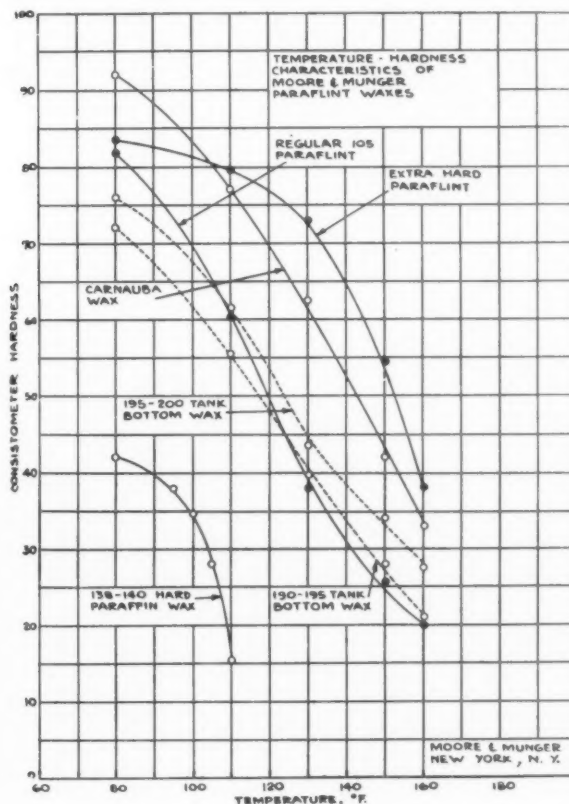
saturated, straight-chain paraffin hydrocarbons with an average molecular weight of 750, corresponding to 50 to 55 carbon atoms. With the exception of the longer chain length "Parafflint" resembles in molecular  
(Turn to Page 225)

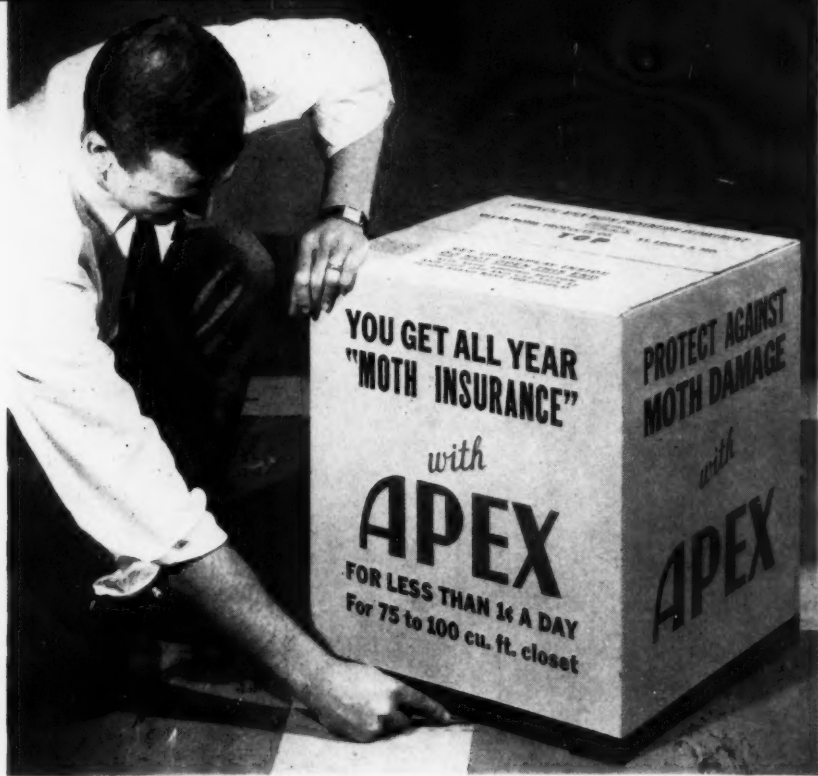
shallow deposits can be mined at 50 cents a ton compared with \$4.00 a ton in the United States and \$9.00 in Britain. Cheap coal and modern production methods employed in the plant make the final product very competitive. Moore & Munger offers "Parafflint RG" at 14 cents a pound in minimum carload or truckload lots; at 15 cents in five ton and less than minimum truck-

Close-up of the hardness test.



Temperature - hardness characteristics of "Parafflint" waxes are shown in graph at right. Wax is produced in South Africa and imported into the U. S. by Moore & Munger Co., New York.





1. For shipment, top of "complete Apex moth prevention department" is sealed to bottom with tape. Retailer cuts tape and lifts off top, which forms base of display unit for point-of-sale vendor.

2. Apex's corrugated "step" display, which forms bottom of shipper, is packed and shipped with products in position, ready for display. Interior packing pieces support products in shipment, holding them in position to prevent denting or other damage during handling.



## Shipper-display unit Builds Moth Product Sales

HERE's how Clean Home Products, St. Louis, gets its full line of moth products into store, off shelf, and into top-rated aisle and counter display space. Using shipper-display unit, sales have risen 22 per cent. Dealers re-stock by ordering individual products.



3. Display is assembled to form aisle vendor by placing "step" on top section of box, and inserting riser card in back of display. Copy emphasizes year-round importance of moth protection, and economy of Apex products. Display is printed in red and blue letters on bright yellow background.

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M-5

Gentlemen: Please send me a copy of the nine formulas and test results of Pyrexcel Aerosol Concentrate 40-5.

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"Sulfoxide" and "Pyrexcel" are Penick's registered trademarks.

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There's no extra charge for the extra services you get when you use Du Pont "Freon" propellents for your aerosol product. Only Du Pont offers you such a complete background of technical and marketing know-how. For more information, or assistance, write E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division 1312, Wilmington 98, Delaware.

\*"Freon" is Du Pont's registered trademark for its fluorinated hydrocarbon propellents.



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# What do your customers want in livestock sprays?

*They may not know it, but the answer is CRAG Fly Repellent—because CRAG Fly Repellent gives them the satisfaction they want by meeting the three basic requirements for better livestock sprays:*

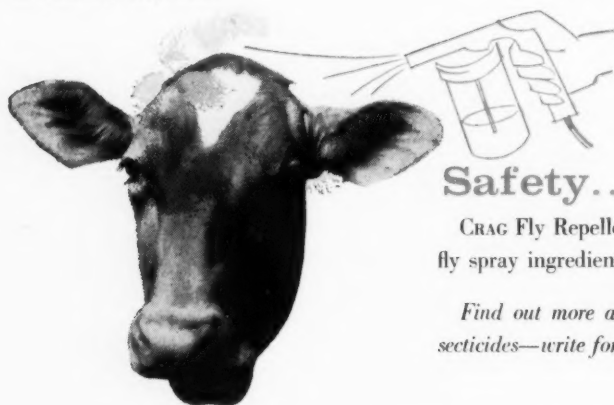
## Effectiveness...

CRAG Fly Repellent itself repels horse flies, stable flies, horn flies, and house flies. And, CRAG Fly Repellent actually improves the effectiveness of insecticides such as methoxychlor and pyrethrins.



## Economy...

Dairymen and cattlemen make more profit from increased yields of milk and beef when their stock are protected from flies with formulations based on CRAG Fly Repellent.



## Safety...

CRAG Fly Repellent is less toxic to animals than any other commonly used fly spray ingredient, including pyrethrins, synergists, or petroleum distillate.

*Find out more about CRAG Fly Repellent and formulations with various insecticides—write for full information today!*

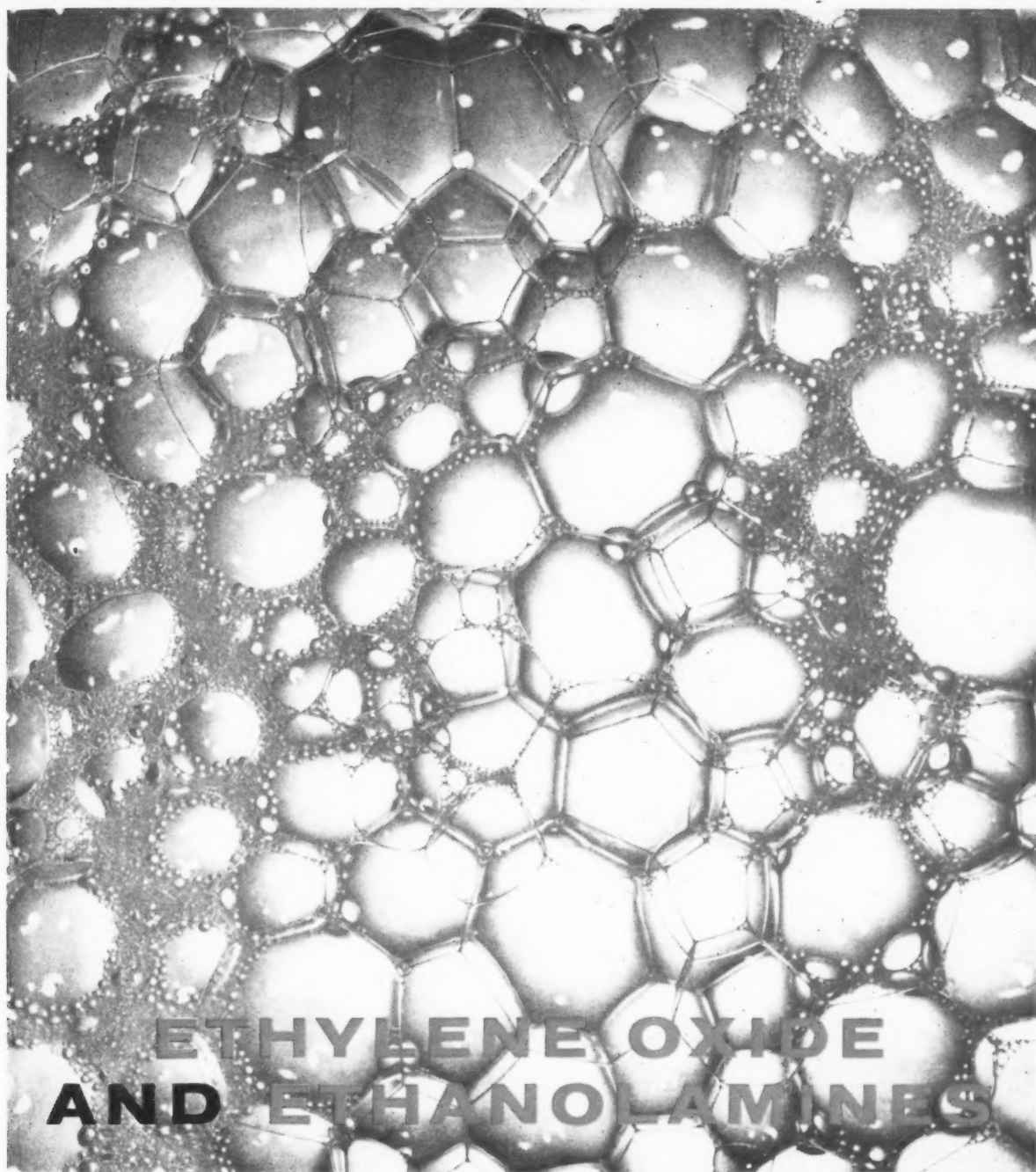
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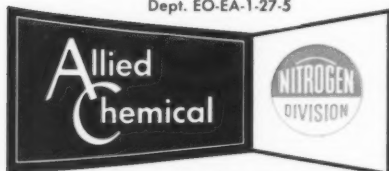




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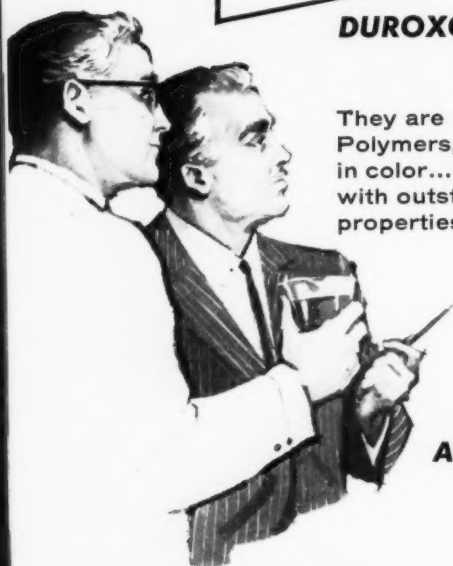
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<b>BUFFABILITY</b> effortless, superb gloss	✓	✓	✓		✓
<b>ANTI-SLIP</b> without tack, tough plasticity				✓	✓
<b>MELTING POINT</b> 200°F and higher for superior protective properties				✓	✓
<b>FLUIDITY</b> non-viscous melt... easy to work with	✓	✓	✓		✓
<b>PURITY</b> always free from adulteration		✓	✓	✓	✓
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<b>ALWAYS AVAILABLE</b> produced entirely in the free western world	✓	✓		✓	✓

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THE DIFFERENCE—  
AND DEMAND YOUR PRODUCT!**







A greatly enlarged view of a culicine mosquito, in a still picture from the Shell Chemical Corp. film "The Rival World," is shown

as it injects its "needle" into a human arm. Every year such mosquitoes strike twenty million persons in India alone.

## Public health importance of

# INSECT PROBLEMS

**M**AN'S war with insects has gone on for many centuries and probably will continue for many more. Our present discussions are concerned with insects of public health importance. These are defined as species which carry human disease organisms or which interfere with man's physical and mental comfort, usually by direct attack upon his person. Thus we are concerned not only with vectors of specific diseases but with insects which merely bite or otherwise annoy man, thereby affecting his comfort and equanimity and frequently his economic welfare. Increased recognition is being given

**By A. D. Hess\***

Chief, Logan Field Station Section  
Public Health Service  
Logan, Utah

to the public health importance of this latter group, and there is a growing tendency to include them in vector control problems. This also applies to the non-hexapodous arthropods such as ticks and mites. There are a multitude of insects which indirectly affect man's health

through their impact upon the quality, quantity, and cost of his animal and vegetable goods, but these are beyond the scope of the present paper.

In view of the great progress which has been made during the last decade in the development of insecticidal materials and techniques, one might expect a corresponding decrease in insect problems of public health importance; unfortunately, this is not the case.

**Solution of major insect problems of public health importance should be based on source reduction or preventive techniques and on the judicious employment of insecticides.**

\*Paper presented before the 42nd mid-year meeting, Chemical Specialties Manufacturers Assn., Chicago, May 22, 1956.

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COVER ODOR O.B. No. 1714 (I)  
COVER ODOR N-43 (I)  
COVER ODOR N-4 (I) (PE)  
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COVER ODOR P.C. No. 3127 (S)  
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S—Sprays, V—Varnishes, W—Waxes



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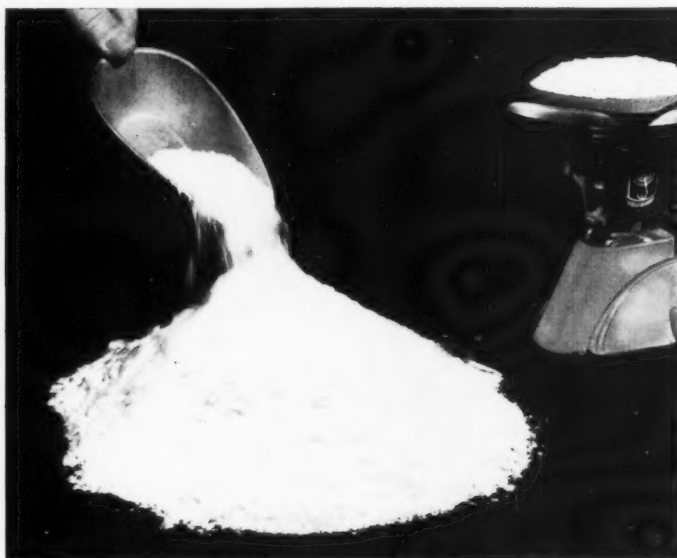
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Now available in quantity,  
uniform quality, and at  
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Pure, white Paraflint is shipped  
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**PARAFLINT** is the most exciting new wax to be developed in twenty years. Not since the advent of microcrystalline wax in the early 1930s have chemists had such an opportunity for product development and improvement. Unusual physical and chemical characteristics, large quantity potential, and a remarkably low cost have already brought about the introduction of PARAFLINT into the paper and polish industries, while creating wide interest in many other fields.

#### CHEMICAL CHARACTERISTICS

PARAFLINT is a new, exceptionally hard, high melting point hydrocarbon wax of the highest purity. It is essentially a mixture of saturated, straight chain paraffin hydrocarbons, having an average molecular weight of approximately 750, corresponding to approximately 50 to 55 carbon atoms. Thus, with the exception of the longer chain length, PARAFLINT is similar in molecular structure to conventional paraffin waxes derived from petroleum. It also resembles them in appearance, being white in color, brittle, and, when melted, of low viscosity.

PARAFLINT differs from conventional paraffin waxes primarily in its high temperature properties and crystal structure, the crystal size being much finer and more like petroleum microcrystalline waxes. The melting point is much higher, 214°F. (as compared to 150°F. for the upper limit of conventional paraffin waxes), and the hardness much greater, particularly at elevated temperatures, where it is comparable to carnauba and candelilla. Scuff and blocking resistance, therefore, are much superior, and the coefficient of friction substantially lower than conventional paraffins.

PARAFLINT is synthesized by the familiar Fischer-Tropsch Process. Low cost coal is burned in the presence of oxygen and steam to produce hydrogen and carbon monoxide, which are then reacted in the presence of various catalysts to make a wide variety of hydrocarbons, depending upon conditions. The wax produced is unusually low in cost. It is also highly refined and pure. This purity and economy render PARAFLINT particularly suitable as a chemical intermediate for further processing, as well as an unusual modifier for petroleum waxes, resins, and plastics in many fields of application.

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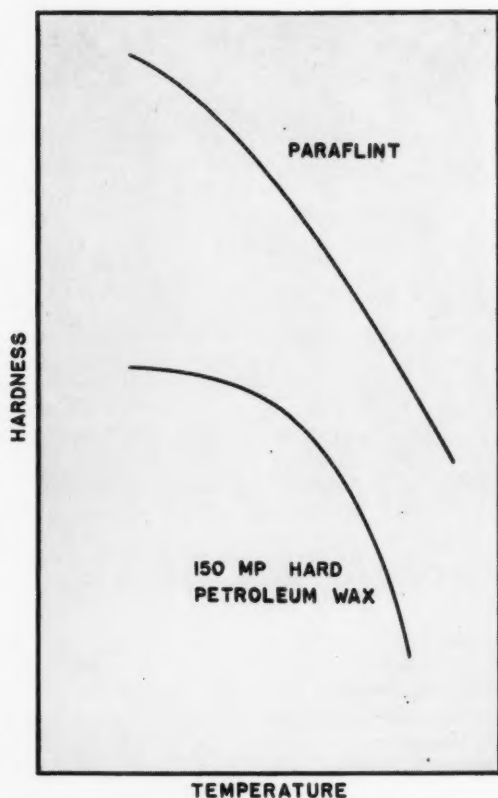
TYPICAL TESTS SHOW VERSATILE QUALITIES OF

# PARAFLINT

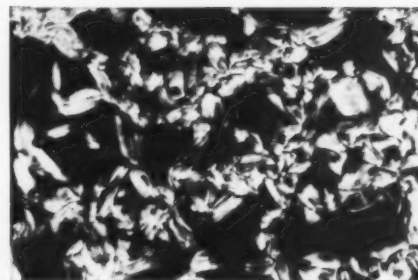
NEEDLE PENETRATION AT 77°F.	1.0
OIL CONTENT	less than 1.0%
AVERAGE MOLECULAR WEIGHT	750 (approximate)
ACID, SAPONIFICATION, BROMINE NUMBERS	Nil
ASH CONTENT	less than .01%
COLOR	White
VISCOSITY AT 250°F.	9.5 centipoises
SPECIFIC GRAVITY AT 77°F.	0.93

ESSENTIALLY ODORLESS

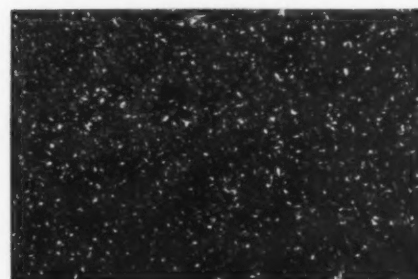
TEMPERATURE-HARDNESS CHARACTERISTICS  
OF MOORE & MUNGER PARAFLINT WAXES



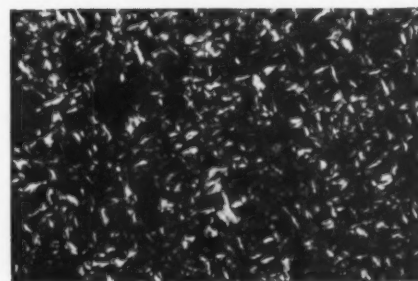
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There are two apparent reasons for this: (1) through faulty environmental sanitation practices, man is constantly increasing the production potentials of insect vectors such as flies and mosquitoes; and (2) the development of insecticide resistance has restricted greatly the usefulness of some of the new materials and techniques. The present paper reviews the current status of our public health insect problems in the light of these factors.

### Mosquitoes

**A**MONG the multitude of insects which plague mankind, mosquitoes have undoubtedly brought him the most death and misery. Down through the ages man's battle against mosquito-borne diseases, such as malaria and yellow fever, has been a major factor in determining his progress, particularly in the development of natural resources. Here in the United States we have largely conquered malaria and yellow fever, but mosquitoes and mosquito-borne diseases still constitute a serious interference in our development of natural resources. Salt marsh mosquitoes have restricted greatly the development of our coastal lowland areas, particularly along the Gulf and Atlantic Coasts. Fresh water mosquitoes are becoming increasingly important in the development of inland resources, especially in the rapidly expanding irrigated areas of the West.

### Mosquito-Borne Diseases

**E**NCEPHALITIS is now the most important mosquito-borne disease in this country; in fact, it is the most important arthropod-borne disease in North America. Scattered outbreaks occur over the U. S. during the summer months with occasional severe localized epidemics. Three distinct viruses are the principal etiologic agents of the arthropod-borne encephalitis in this country: Western equine (WE), Eastern equine (EE), and St. Louis (SL). As the

names imply, WE and EE produce clinical symptoms in horses as well as humans, but SL infections in horses are subclinical. EE has also been responsible for serious epizootics among pheasants in the Northeast. WE and SL are confined principally to the western half of the United States, although SL outbreaks have occurred as far east as Indiana and Kentucky; EE occurs chiefly in the states bordering the Gulf and Atlantic coasts.

The chief summer reservoir for the encephalitis viruses appears to be wild and domestic birds, with mosquitoes transmitting the viruses from bird to bird. Less is known about the long-term or winter reservoirs. Man and horses are accidental victims and receive their infection through the bites of mosquitoes. It is generally agreed that in the Western states *Culex tarsalis* is the primary vector of WE and SL, with other species such as *Aedes dorsalis* (including *A. melanion*) and *A. nigromaculis* playing secondary roles. There is increasing evidence that house mosquitoes (*Culex pipiens* and *C. quinquefasciatus*) may have a primary role in the transmission of SL in the central states. Less is known about the vectors of EE, but *Culiseta melanura* appears to be important in the basic infection chain (bird-mosquito-bird) and salt marsh mosquitoes may possibly be involved in transmission to humans.

It is readily apparent that the principal known mosquito vectors of encephalitis are species whose breeding potential is increased by man's domestic and agricultural activities. *Culex tarsalis*, *Aedes dorsalis*, and *A. nigromaculis* are particularly associated with irrigated areas in the West. There are now some 30 million acres under irrigation in the West and the amount is being increased by about a million acres each year. These developments are being accompanied by proportionate increases in the production of irrigation mosquitoes, due primarily to the use of faulty irrigation and water conservation practices. For example, in

one new irrigation project which we have had under observation, the production of encephalitis mosquitoes (*Culex tarsalis*) has been increased almost a hundredfold as a result of seepage from the main irrigation canals and laterals. House mosquitoes (*Culex pipiens* and *C. quinquefasciatus*) breed in a wide variety of aquatic habitats but have an especial predilection for water in artificial containers and polluted water associated with human habitations and sewage disposal. Thus, the principal encephalitis mosquitoes are favored by man's faulty agricultural and environmental sanitation practices; and over the U. S., in general, the problem is increasing rather than decreasing. The ultimate solution to the problem must be based upon improved sanitation practices, but there will probably always be a need for judicious use of insecticides to supplement these practices. Insecticidal control is complicated by the fact that the most important mosquito vectors have shown a propensity for developing high levels of resistance to the chlorinated hydrocarbons. The most promising substitutes appear to be the organophosphorus insecticides; these compounds do not, however, have the long-lasting properties which made the chlorinated hydrocarbons ideal for residual larviciding and adulticiding.

Malaria was once one of the most widespread and debilitating diseases in the southeastern and southwestern parts of our country. The disease has now been almost eradicated from the U. S., and eradication programs are under way in Central and South America, the chief weapon being the use of residual insecticides. The mosquito vectors of malaria, however, are still with us (principally *Anopheles quadrimaculatus* and *A. freeborni*). There is, therefore, a constant hazard of re-introduction of malaria from foreign countries; and it is important to maintain constant vigilance and stamp out any new foci of infection as soon as possible after they are established. This is



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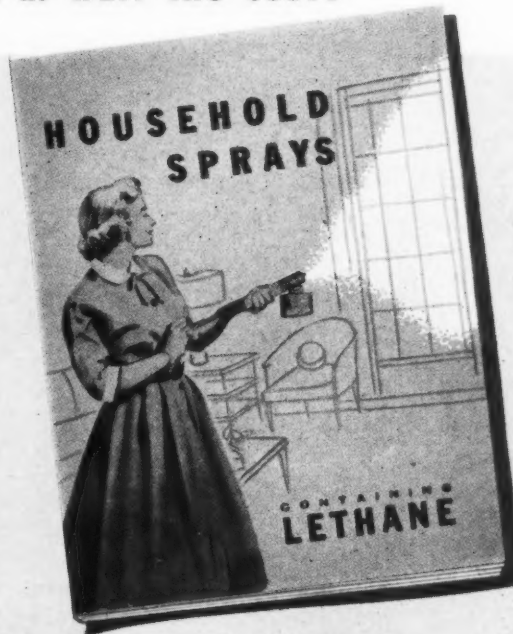
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best accomplished by the combined use of antimalarial drugs and mosquito control measures. The spectre of anopheline insecticide resistance, now present in a number of foreign countries, has begun to appear in the United States but has not yet interfered with malaria control operations. The long-range elimination of anopheline breeding habitats is basically as sound as ever.

Yellow fever was a serious disease in the southern United States until the turn of the century but has not been present since the last outbreak in New Orleans in 1905. The highly domestic mosquito vector of urban yellow fever (*Aedes aegypti*) is, however, still present in abundance in our southern states; and potential vectors of jungle yellow fever (*Haemagogus* sp.) have recently been reported from the extreme southwest part of the country. The 1954 outbreak of yellow fever in Trinidad (after being unreported for 40 years) and the recent waves of jungle yellow fever which have moved through Central America have brought increased attention to the continued importance of this disease. *Aedes aegypti* eradication programs are underway in most of the countries of Latin America, and it is not unlikely that the United States may eventually join in a plan for complete eradication from the Americas. *Aedes aegypti* has been noted as one of the species most susceptible to DDT, but field strains in Trinidad have recently been found to be DDT-resistant. This emphasizes the need for prompt and area-wide control if this mosquito is to be eradicated from the Americas. We can, therefore, say that the yellow fever mosquito problem is still very much with us.

Other mosquito-borne diseases which are no longer of much concern in this country are dengue and filariasis, but their common vectors (*Aedes aegypti* and *Culex quinquefasciatus*, respectively) are still present in abundance. The dengue and filariasis potentials in the United States would obviously be affected by any campaigns to



A still photo of a grasshopper, from the film "The Rival World," recently produced by Shell Chemical Corp., New York.

control encephalitis and yellow fever mosquitoes. Newly discovered arthropod-borne viruses, such as the California virus, may in the future be found to be of significant public health importance.

### Pest Mosquitoes

**A**S mosquito-borne diseases are gradually brought under control, we are able to give more attention to species which are not known to transmit specific diseases. The modern concept of public health is that it means not merely absence of infirmity but complete physical, mental, and social well-being. Anyone who has been exposed to the attacks of salt marsh, flood water, or irrigation mosquitoes, which are produced in unbelievable numbers in many parts of the country, will readily agree that they very seriously impair the physical, mental, and social well-being of the resident human population!

A survey which we recently made in the Milk River Valley of northern Montana illustrates the public health importance of pest mosquitoes (in this case, irrigation mosquitoes). A major portion of the 133 families interviewed reported that mosquitoes seriously interfered with the healthful outdoor activities of both children and adults. Most individuals reported some type of injurious effects from

mosquito bites such as itching, swelling, scratching, and secondary infections. Over 50 percent of the individuals examined by the interviewing physician suffered abrasions from the scratching of mosquito bites, and 40 percent of the individuals living in substandard housing showed signs of secondary infection. Allergic reactions and secondary infections were frequently so severe as to require the attention of a physician or even hospitalization. If disease is defined as "a disturbance in function or structure of any organ or part of the body," then "mosquito bites" must certainly be defined as a disease!

The increasing interest of State Health Departments in pest mosquito problems is exemplified by a resolution for more work on salt marsh mosquitoes which was passed at the last conference of State and Territorial Health Officers in Washington, D. C. Several bills have been introduced in Congress to provide for the U. S. Public Health Service to expand its research, control demonstrations, and technical consultations on pest mosquito problems.

There are about 150 species of mosquitoes in the United States breeding in a wide variety of aquatic habitats, including salt marshes; fresh water seeps, marshes, and swamps; impounded waters;

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irrigation ditches, pools, and seeps; flood, woodland, and snow water pools; treeholes; pitcher plants; all sorts of artificial water containers around human habitations; and collections of water polluted with sewage or industrial wastes. Scarcely a community is without one or more mosquito pests. It is significant that some of the most vexing pest mosquito problems are either man-made or aggravated by faulty environmental sanitation practices. House mosquitoes are produced in prolific numbers in artificial water containers, sewage effluent, and the sewage lagoons which are coming into widespread use, particularly in the West. Millions of acres of irrigated land are now producing hordes of mosquitoes where none were produced before. The vast salt marsh mosquito problem has even been extended by man's interference with natural drainage, production of salt and mine liquid wastes in inland areas, and lowering of the freshwater table with resultant intrusion of salt water.

Source reduction (elimination of breeding habitats) offers the ultimate solution to most pest mosquito problems, and more and more mosquito abatement districts are giving major attention to this. Emphasis on preventive measures has undoubtedly been stimulated by the development of high levels of resistance to chlorinated hydrocarbons by salt marsh mosquitoes, house mosquitoes, and irrigation mosquitoes. There will, however, always be a need to supplement source reduction with chemical control. At the present time the organophosphorus compounds offer the most promise for this purpose.

### Non-Biting Flies

**H**OUSE flies are uninvited guests at almost every human habitation in the United States during the summer season. Their structure and habits make them ideally adapted for the transfer of disease micro-organisms from feces, garbage, and other filth to human

food. They are undoubtedly involved in the transmission of typhoid and bacillary dysentery and are constantly under suspicion for the transmission of other diseases, particularly the enteric diseases.

Although the common house fly (*Musca domestica*) is the most widespread and notorious of our non-biting flies, there are a host of other species which may be equally annoying and also involved in transmission of disease. Small eye gnats (*Hippelates* spp.) which abound in the southern U. S. and the Coachella Valley of California, are most annoying as they swarm about the face and eyes and are believed to transmit conjunctivitis, or pinkeye; man has created the major source of eye gnat production through his cultivation of the soil. Tiny fruit flies (*Drosophila* spp.) readily pass through window screens into kitchens where they are attracted to fruits and other food; and in poorly sanitized towns, most of them have at one time or another frequented the pits of outdoor privies, their favorite daytime resting place! *Drosophila* are produced in tremendous numbers in piles of waste citrus and other fruits. Blow flies (*Calliphoridae*) and flesh flies (*Sarcophagidae*) may pass directly from decayed carcasses or animal excrement to meat or other food exposed in outdoor stands, though they do not enter houses as readily as houseflies. Screw-worm flies often blow meat, and one (*Callitroga americana*) is a serious producer of myiasis in livestock in the southern states and sometimes in humans. Various other flies are currently of importance in the U. S., including the lesser house fly (*Fannia canicularis*), several species of *Ophyra*, and the false stable fly (*Muscina stabulans*); human intestinal myiasis sometimes is caused by eating food upon which the eggs of the false stable fly have been deposited. Various small flies and gnats frequently create annoyance though not involved in disease transmission. These include moth and filter flies (*Psychodidae*), midges (*Chiro-*

*nomidae*), and phantom midges (*Chaoboridae*).

Of all the public health insect problems in the U. S. today, flies offer the outstanding example of a "man-made" problem. Through inadequate storage and disposal of animal wastes, garbage, sewage, refuse, and fruit and vegetable wastes, man has tremendously increased the production potentials of flies; in fact, the major production of flies undoubtedly comes from breeding sources created by man. It is obvious, then, that any realistic control program must be founded on improved environmental sanitation practices which eliminate the breeding source—sanitary methods of collecting, storing and disposal of garbage and refuse; proper handling and disposal of animal and human wastes; and sanitary management of industrial wastes, particularly food canneries, packing plants, abattoirs, and feed mills. Here again, these primary source reduction measures require supplementation by secondary chemical control measures. Insecticidal control has been hampered by the development of high levels of resistance to chlorinated hydrocarbons by houseflies, although blowflies and other species do not appear to have developed any appreciable resistance. As with mosquitoes, there has therefore been a shift to the use of organic phosphorous compounds. There has also been a development of new control techniques particularly adapted for use with these compounds, such as the use of dry, liquid, and paint-on baits and impregnated cords. In spite of all these measures, the fly problem is probably greater now than at any time in the history of our country. Much more research is needed on the habits and ecology of flies in order to develop the most effective source reduction measures.

A variety of biting flies create problems of public health importance in the United States. Horse flies and deer flies (*Tabanidae*) are widely distributed in

(Turn to Page 219)





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SOAP and CHEMICAL SPECIALTIES



# Mercurials as Disinfectants

## Evaluation of mercurial antimicrobial action and comparative toxicity for skin tissue cells.

By Frank B. Engley, Jr.\*

School of Medicine  
University of Missouri

**T**HE PROBLEMS involving the use of chemicals as antibacterial agents have been of particular interest to me as a bacteriologist (or should we say microbiologist since because of these chemicals taking care of many of the bacteria we have had to reach out for more organisms to work with). My first experience with them in laboratory work was some 18 years ago running, if you will pardon the expression, "phenol co-efficient tests." Since that time I have been associated with problems involving antiseptics, disinfectants, preservatives, antibiotics, gaseous sterilization—in other words antibacterial agents.

Some ten years or more ago with Morton and North we were asked to carry out a study on mercurials for the Council on Pharmacy and Chemistry of the American Medical Association which was published in its journal in 1948. (1) This report suggested that mercurials did not fulfill all the conditions expected of antiseptics. The report had its desired result in that it stimulated considerable thinking, discussions, research and perhaps some controversy in the field. Unlike the theatrical or political figure who once said that it didn't matter what was written about him so long as

they wrote something and spelled his name correctly—we in the field of scientific investigation would rather be quoted correctly than not at all. In this regard the report might not be the most misquoted or maligned report from certain quarters (not quaternaries) but it is in there with the best or the worst depending upon your point of view or the source of your income. In any regard, stimulation of thinking, discussion, research and perhaps some controversy (as they say in the business world) is good for any field—and what is good for any field is good for the country or vice-versa.

At this point it would be best to stress that testing of chemical antibacterial activity and evaluation of these tests is not a simple thing. Each test has its advantages and disadvantages—factors such as time, temperature concentration of drug, number of organisms, types of organisms, plus the investigator's own minor variations on the technique which defy putting in print or were cut out by the editor of a journal as superfluous, all affecting the findings.

So it is true that each test has its good and bad points, drawbacks, its pros and cons, and each chemical has its own special characteristics to suit it for some special use. There are people who argue one side or the other as to the relative merits of a test-tube test vs. an animal test vs. a "use" test. And then too, we have some who argue

all sides for the sake of argument, or their chemical or just to be-cloud the whole issue.

### Efficacy of Mercurials

**W**ITH this background then let's come to the subject of the moment: Mercurials. I would like to present some evidence which raises questions in my mind as to the efficacy of mercurials as antiseptics, preservatives or antibacterial agents. These are very real, serious questions and doubts which I want to pass on to you for serious consideration.

Mercurial compounds have been used as disinfectants, antiseptics and preservatives for many years. It was probably the work of Koch (2) in 1881, some 75 years ago, that first stimulated the use of mercuric chloride by many workers as an antibacterial agent. His work with anthrax spores suggested that high dilutions of  $\text{HgCl}_2$  would kill the spores of the organisms considered to be the most resistant of pathogenic bacteria. His work was with dried organisms and indicated that alcohol was poor in comparison: Both findings have been clarified considerably since then, as you well know, with bichloride shown to be highly bacteriostatic not cidal and alcohol to be fairly effective against spores in the wet stage.

In considering a chemical as an antibacterial agent, I personally feel that in the final analysis each chemical or group of chemicals

\* Based in part on studies with Dr. Tom Wynn, present address Cook County Hospital, Chicago, and Dr. C. M. Pomerat, The University of Texas-Medical Branch, Galveston. Paper presented May 21, 1956 at 42nd midyear meeting, Chemical Specialties Manufacturers Association, Chicago.

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should be put to every possible test. Then impartial groups should decide on the basis of all the tests whether the chemicals in question really do what is claimed for and expected of them. I am not recommending here that anyone screening drugs should do a thesis problem on each and every chemical. However, those chemicals brought to the fore as potential commercial antibacterial agents should face a battery of tests to see how they show up under a variety of conditions. Don't use any one tailor-made test that one knows the chemical will pass or fail. Any chemical can be shown to be good or bad depending on the test employed.

So, back to mercurials. The early work by Koch established that bichloride of mercury could keep anthrax spores from growing out even in very high dilutions in the routine testing media.

Along these lines it would be best to look first at the "phenol coefficients" of various representative mercurials. Using *Staphylococcus aureus* as the test organism and taking the highest dilution of disinfectant killing microorganisms after 10 minutes but not after five minutes contact at 37°C. we find the following: With phenol active at a 1:85 dilution the following phenol coefficients were calculated. (McCulloch. (3))

Compound	Dilution Active	Phenol Coef.
Mercuric chloride	16,000	189
Mercurochrome	160	1.8
Merthiolate	120,000	1412
Metaphen	140,000	1647
Phenylmercuric nitrate (After Birkhaug, (4) 1933)	192,000	2259
Iodine	....	22.3
Hexylresorcinol	....	66.6

These figures lead us to bring out a very important point. This test as carried out with the usual nutrient medium reveals the chemicals' ability only to inhibit growth. By using dilution and/or preferably neutralizing substances in the recovering media one can differentiate between bacteriostasis and bactericidal activity in such a test-tube test. In the case of mercurials, fortunately or unfortunately, depending

Table 1. Mercurials Tested			
Name	Manufacturer	Chemical name	Conc. of use (per cent)
Merbak	Schieffelin	2-acetoxymercuri-4-diisobutyl phenol	0.1
Mercarbicide	Upjohn	orthhydroxyphenylmercuric chloride	0.1
Mercresin	Upjohn	orthhydroxyphenylmercuric chloride + secondary-amylic cresols	0.1
Mercuric chloride*	—	mercuric chloride	0.1
Mercuric iodide*	—	mercuric iodide	0.1
Mercurochrome	H W D †	disodium 2, 7-dibrom-4-hydroxymercuri-fluorescein	2.0
Mercuraphen	Sharpe & Dohme	sodium oxymercury-o-nitrophenolate	0.1
Mercedein	H W D †	monohydroxymercuri-diiodoresorcin-sulfon-phthalate	0.2
Merthiolate	Lilly	sodium ethylmercuri-thiosalicylate	0.1
Metaphen	Abbott	anhydride of 4-nitro-3-hydroxymercuri-ortho-cresol	0.2
Phenyl mercuric borate*	—	Phenyl mercuric borate	0.1

\* Non-proprietary.

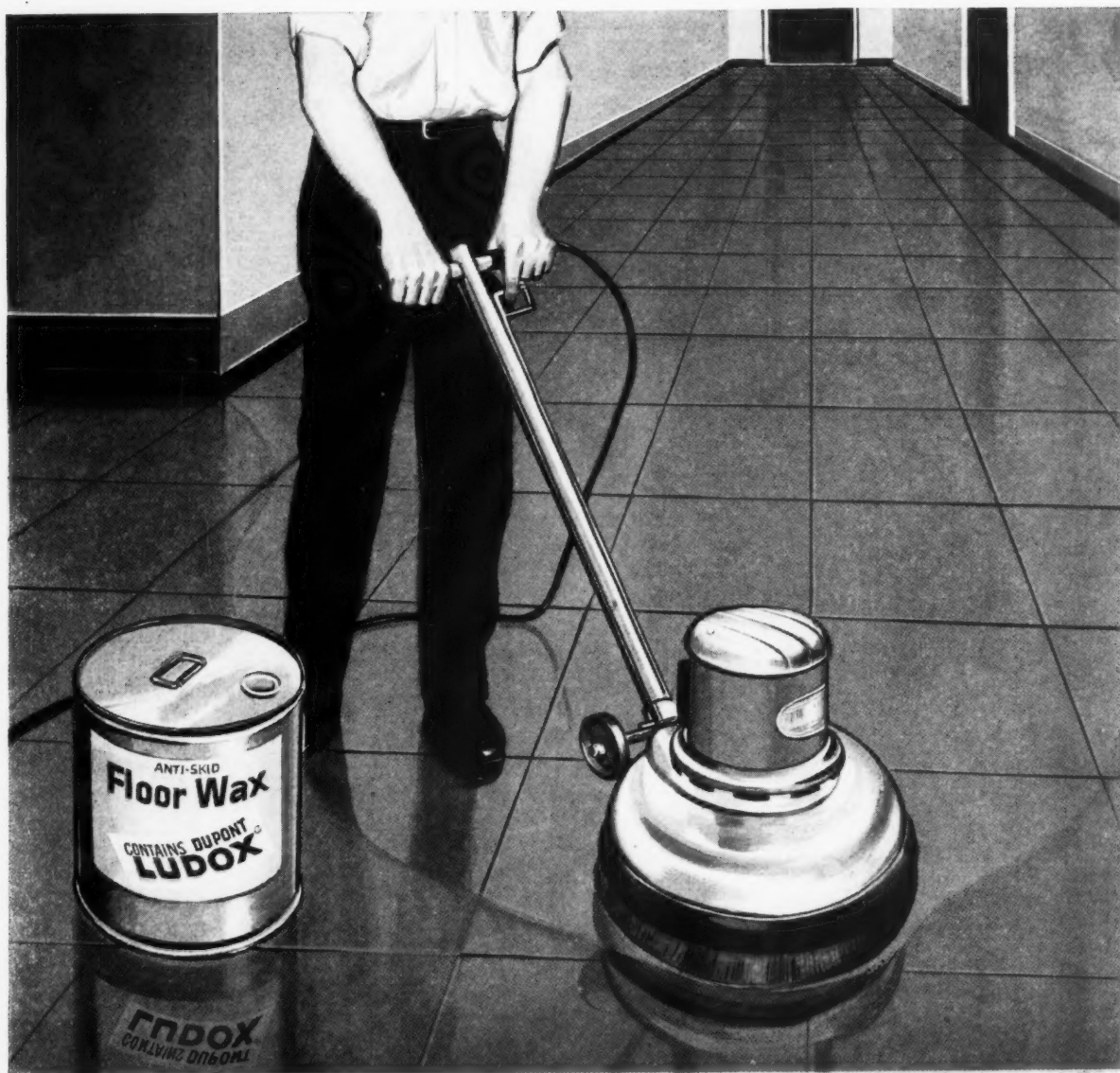
† Hynson, Westcott & Dunning.

upon your point of view, both synthetic, purified and naturally occurring neutralizing substances are readily available. It is because of these neutralizing substances containing available, —SH (sulfhydryl) groups that so much controversy has developed. It would only be of perhaps academic interest that cystine, glutathione, ammonium sulfide, thioglycollate and a number of other compounds could neutralize or, if you prefer, reverse the action of mercurials on organisms after exposure, except for the fact that body fluids and tissues contain neutralizers—the skin, perspiration, urine, blood, serum, tissue exudates and all. Thus it is of practical importance. Some chemicals may have their antibacterial action reduced or neutralized only by some weird chemical such as "itchigummi acid" which does not occur naturally or in the field of use; therefore, while of academic and scientific interest in studying mode of action or kinetics of the drug activity, the fact that the drug antibacterial action may be neutralized or reversed is not of significance in its utilization. This is not the case with mercurials. The neutralizers are found everywhere. As early as 1889 (Geppert) (5) showed that such was the case.

Thus our pretty phenol coefficient values given above do not mean anything unless we add a neutralizer to the recovery medium such as thioglycollate or preferably serum. The phenol coefficients drop

precipitously with the mercurials tested in this manner, revealing little antibacterial action. The same is true if serum is added to the test medium. Bichloride of mercury turns out with negligible activity as do the organic mercurials. Discussions with certain individuals suggested that this might not be too important but let me remind you that even though this is known many still use bichloride as a supposedly trusted antibacterial agent especially in hospitals for so-called "sterilizing" of thermometers. In a survey we carried out in the past two years in one large hospital in a medical center—the nursing service tested thermometer glasses on various wards and at various times isolating staphylococci, streptococci and others, as well as our friend *Escherichia coli* "from the other side of the tracks." The original preparation may have some activity but continuing standing and accumulation of sputum and "crud" rapidly reduces any activity. This data does not include the story about a glass of bichloride that one of the patients drank thinking it was the ice water although it might have left him a little cold.

In the course of our studies (6) we applied the paper disc assay technique to the study of mercurials using exacting and standard methods for accurate determinations. Table I lists some of the representative compounds tested giving proprietary name and chem-



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**Table 2. Comparison of Antibacterial Activity of Mercurial Antiseptics by Paper Disc Assay Method (20 ML. Plate)**

Compound	Dilution of use (per cent)	Nutrient agar inhibition zone (in mm.)
Phenyl mercuric borate	0.1	33
Mer cresin	0.1	32
Mer carbolide	0.1	32
Mer thiolate	0.1	32
Mer cu ro phen	0.1	29
Mer curic iodide	0.1	28
Metaphen	0.2	25
Mer cu ro chrome	2.0	24
Mer bak	0.1	23
Mer odicein	0.2	18
Mer curic chloride	0.1	18

ical name. Hereafter they will be called by proprietary name so that all will recognize the substance — you realize the difficulties of referring to Merodicein, for example, each time as monohydroxymercuriodo-resorcinsulfonphthalein.

particular chart has been copied and quoted elsewhere but means nothing as it stands alone — like the phenol coefficient test data without neutralizer. With serum added to the medium, the same mercurial giving the large zone shows negli-

**Table 3. Comparison of Antibacterial Activity of Mercurials Using Neutralizers by Paper Disc Method**

Compound	Dilution of use (%)	Nutrient agar inhibition zone (in mm.)	Nutrient agar + 0.2% thioglycollate	50% Serum agar
Phenyl mercuric borate	0.1	33	—	—
Mer cresin	0.1	32	—	—
Mer carbolide	0.1	32	—	—
Mer thiolate	0.1	32	—	—
Mer cu ro phen	0.1	29	—	—
Mer curic iodide	0.1	28	—	—
Metaphen	0.2	25	—	—
Mer cu ro chrome	2.0	24	—	—
Mer bak	0.1	23	—	—
Mer odicein	0.2	18	—	—
Mer curic chloride	0.1	18	—	—

— = no inhibition zone.

Table 2 shows the zones of inhibition. The diameters of these zones were compared as shown using the dilution of use against *Staphylococcus aureus*. It indicates the relative activity of the various mercurials by this test. Tincture preparations gave the same data. This

gible activity. The table which should have been borrowed from our publication to give a more realistic picture would have been the next, (Table 3) which shows in each case with thioglycollate or with serum added no inhibition zones are present — meaning in es-

**Table 4. Results of In Vivo Testing of Antiseptics**

Authors	Disinfectant	Organism	Animals		
			Inoc.	Dead %	
Nungester, Kempf 1942	Tinc. iodine	2.0%	streptococcus	29	48
	Tinc. mer cresin	0.1%		31	94
	Tinc. merthiolate	0.1%		27	96
	Tinc. phemerol	0.1%		31	90
	Tinc. iodine	2.0%	pneumococcus	15	0
	Tinc. mer cresin	0.1%		48	23
	Tinc. merthiolate	0.1%		40	55
	Tinc. phemerol	0.1%		52	67
	Tinc. phemerol	0.2%		56	16
	Tinc. vehicle			47	68

From "An 'Infection-Prevention' Test for the Evaluation of Skin Disinfectants," W. J. Nungester and Alice H. Kempf, J. Infec. Dis., 71:174, 1942.

sence no antibacterial activity under this method of test.

## In Vivo Tests

THE methods described above, the phenol coefficient and the paper disc assay procedures, are strictly test-tube tests. They have been criticized since they are not *in vivo* tests. At this time then let us examine some data on "*in vivo*" tests. In the literature as far back as 1923 Rodwald (7), with a vegetative *Salmonella* test organisms, showed that bichloride of mercury prevented its growth in subcultures but did not prevent this organism from killing mice when injections were made. More recent studies with the mouse-tail techniques, Nungester and Kempf (8) in 1942 (Table 4) revealed the mercurials to be less effective than iodine against the fairly resistant streptococcus. Slightly better results were obtained against the pneumococcus. The pneumococcus data perhaps should receive less attention here since it is not primarily a skin pathogen.

In our studies (Table 5) shown here with studies by Pierce and Tilden we strove to develop a combination *in vitro-in vivo* test with a known human pathogen also infectious for mice. We used a technique similar to a phenol coefficient test, but in addition to inoculating appropriate media following exposure of organisms to the chemicals, mice were injected with the mixture of chemical in its dilution of use and the organisms. The findings on a typical experiment are shown here and in Table 6 the significance is pointed out. Here are shown the death in mice and the lack of growth in a nutrient dextrose broth. If the broth findings above were taken as the true indicator, the chemicals would appear as good antibacterial preparations. However, the broth with neutralizers thioglycollate and serum allow the organism to grow out. This is in direct correlation with the findings in the animal test where the mice die from streptococcus infection. These preparations

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**Table 5. Results of In Vivo Testing of Antiseptics**

Authors	Disinfectant	Organism	Animals	
			Inoc.	Dead
Pierce-Tilden 1945	Tinc. "D.C.-12"	0.1% pneumococcus	120	42
	Tinc. metaphen	0.1%	54	85
	Tinc. merthiolate		34	97
	NaCl	0.85%	143	98
Morton, North, Engley 1948	Mercurochrome	2.0% streptococcus	8	63
	Metaphen	0.2%	8	25
	Merthiolate	0.1%	6	66
	Phenol	1.0%	4	0

From "Evaluation of Antimicrobial Agents," by M. E. Pierce and E. B. Tilden, J. D. M. Res., 24:95, Oct. 1945. "The Bacteriostatic and Bactericidal Actions of Some Mercurial Compounds on Hemolytic Streptococci," E. Morton et al., J.A.M.A., 136:37, Jan. 8, 1948.

**Table 6. Comparison of In Vivo and In Vitro Methods of Evaluating Mercurial Antiseptic Activity**

Compound	Conc. of Use (%) Mice	Mice Dead Mice Injected*	Dextrose		
			Dextrose Broth	Broth + 0.1% thioglycollate	Broth + 10% serum
Phenyl mercuric borate..	0.1	8/10	—	+	+
Merbak .....	0.1	9/10	—	+	+
Merthiolate .....	0.1	10/10	—	+	+
Mercurophen .....	0.1	9/10	—	+	+
Mercuric iodide .....	0.1	8/10	—	+	+
Mercarbide .....	0.1	8/10	—	+	+
Merodicein .....	0.2	10/10	—	+	+
Metaphen .....	0.2	7/10	—	+	+
Mercurochrome .....	2.0	10/10	—	+	+
Mercuric chloride .....	0.1	10/10	—	+	+
Water .....		10/10	+	+	+

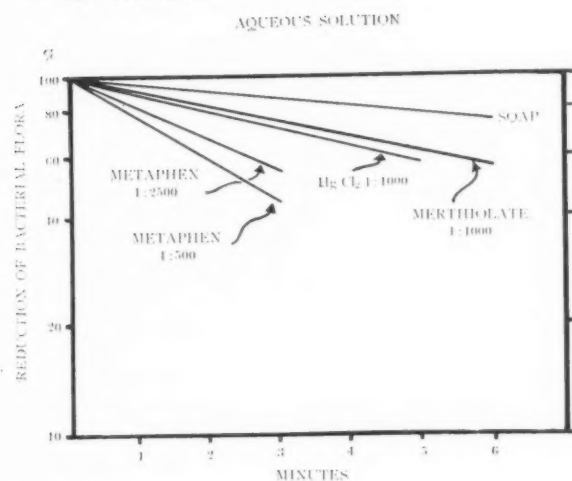
\* Mice injected and tubes inoculated with 0.1 ml. of a 1:2 dilution of the Streptococcus mercurial mixture after a ten minute exposure at 32.34°C.

under this test do not do what an antiseptic should do—prevent infection.

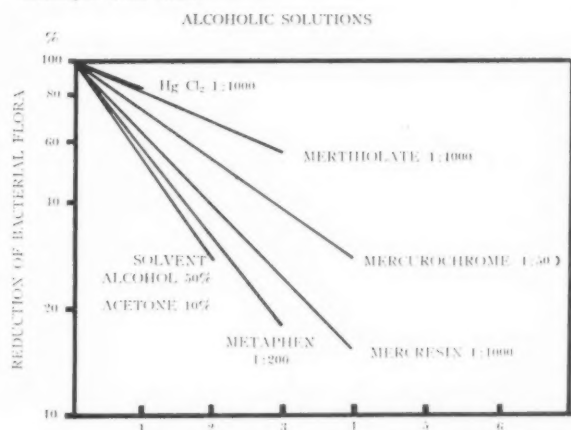
The *in vivo* methods described above have been criticized not because they are not test tube tests but because they are not "use" tests. Some state that these *in vivo* and *in vitro* tests do not simulate actual usage. The major proponent

of the use test Dr. Price (9) has suggested that while such tests are important procedures—the *in vitro* and *in vivo* tests are perhaps more accurate and quantitative than when using human subjects. His data using the hand washing—basin technique are of interest to us in this report. Graph 7 indicates the reduction of bacterial flora of the

**Graph 7. A comparison of aqueous preparations tested by Price technique (from Price).**



**Graph 8. A comparison of alcoholic preparations by the Price technique (from Price).**



skin plotted against time with aqueous preparations and in Graph 8 a comparison of alcoholic preparations. The latter are more effective than water preparations but it should be noted that the solvent removes organisms faster alone than with the mercurials added. He further-more suggests that the mercurials combine with skin forming a layer over the organisms neither killing nor preventing them from growing.

The use of mercurials as preservatives in vaccines and antisera is of considerable interest. These chemicals are added to protect against the introduction of organisms in multi-use containers in particular. We have always wondered about their efficacy in that both vaccines and antisera contain reactive groups to tie up these compounds. In a series of continuing experiments over the past several years we have begun to evaluate various preservatives in serum and vaccines under conditions of use. Employing stock vaccines and serum with and without preservatives and stored at varying lengths of time a contaminating dose of representative sporeformer (*Bacillus subtilis*) in the spore stage gram negative rod (*E. coli*) and gram positive coccus (*S. aureus*) were added. While the mercurial preservatives had good activity on initial addition, after storage of three, six or more months decreasingly

(Turn to Page 223)



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# AEROSOLS ABROAD...

**While aerosols have a good future in Europe, present prices are a limiting factor. Many components are imported, keeping prices high. Utility more important than novelty appeal.**

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**A**N analysis of the European aerosol market, actual and potential, and some interesting comparisons with the situation prevailing in the United States were presented recently by J. S. Jellinek of Polak's Frutal Works, Amersfoort, Holland. (*Parfuemerie and Kosmetik*, Oct. 1956, p.563).

The phenomenal success of pressure packing in the United States induced many producers in various European countries to venture into this field in the hope of a similar development. Some aerosols of European manufacture were very successful, many failed in spite of extensive advertising campaigns. This has disappointed some manufacturers to the point of distrust against the whole development. Blind enthusiasm for all aerosols and loss of confidence in the whole field are equally unjustified.

When weighing the potentials of the aerosol field it must be remembered that these products do not constitute a unified branch of industry. Each group of pressure packaged goods must be evaluated on its own merit.

For purposes of market evaluation, existing and potential aerosols are divided into three groups: 1. Items where the change to pressure packaging effects a fundamental improvement of the product itself. 2. Items which gain only novelty but no product improvement. 3. Items where pressure

packaging adds to the convenience of application even if it does not bring a fundamental product improvement.

## **Improved Products**

**T**HE pressure package is capable of atomization, finer than any previously obtained by simple means. The interior pressure in the container sends the liquid product through the valve as a very fine spray. Furthermore, these fine droplets explode into smaller fragments owing to the instantaneous evaporation of the propellant. These particles are so minute that they remain airborne for a long time and frequently evaporate before settling on walls and floors. The smaller the droplet the faster the evaporation rate.

Products fundamentally improved by these characteristics of the aerosol system include insecticides, air fresheners, and space disinfectants. Spraying from a pressure package is far less laborious and far more effective than from a hand spray gun or similar device previously employed for the purpose. These purely mechanical spraying devices produce much larger droplets which do not explode, do not remain airborne and evaporate, but which soon settle on walls and floors thus losing part of their effectiveness.

For insecticides, air fresheners, etc., intended for use in small

spaces, especially in the home, the aerosol package is so obviously superior that there can be no doubt of a future favorable market development.

The aerosol package facilitates rapid and even application of a liquid substance to a solid surface in the form of as thin a film as may be desired. This constitutes a basic improvement of such products as protective coatings where large areas are treated, of lubricants where hard to reach places have to be sprayed, and of any product where evenness and extra thinness of film is important. These characteristics do not play a very important part in the cosmetics field with one notable exception: hair lacquer. This product has actually gained a new lease on life since its introduction in a pressure package and there is no doubt of its bright future.

Exclusion of air from the product, both during storage and while being used, is another interesting characteristic of the pressure package. New horizons are thus opened for substances which suffer from contact with oxygen or humidity, present in the atmosphere. Cold waving and depilatory compounds could benefit from this, because the thioglycollates present in these products are gradually oxidized by the oxygen in the atmosphere and lose some of their effectiveness. (Turn to Page 209)

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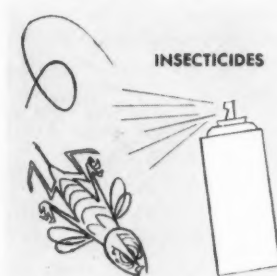
There is a whole new world of merchandising opportunities for cosmetics, household and industrial products, thanks to Aerosols. But . . . Aerosols present special problems of fragrance compatibility. That is where Felton's creative experience makes the big difference! Our perfume chemists and Aerosol technicians will adapt or custom-create the fragrance to meet the exacting requirements of your product and give it more sales appeal.



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In all items cited here, pressure packaging introduces a fundamental improvement of the product. In spite of the higher price of the aerosol compared with a similar product in a conventional package there can be no doubt of the aerosol's success in the market.

### **Novelty Appeal**

**A**EROSOLS have been recommended for many applications which have nothing in their favor except novelty. These suggestions have generally come from pressure-packers who naturally seek as wide a field for their services as possible and from certain specialties makers who enthuse about all that is new. Toothpastes, mouth washes, talcum powder, hand cremes, bath oils and hair care products are in this category. Some of these items have actually been marketed in aerosol form and in some instances they have met with a certain success thanks to effective advertising campaigns. However, if the aerosol packaged product is more expensive than the rival product in a conventional package, permanent success of the aerosol in this group cannot be counted upon, at least in the European market.

### **Ease of Application**

**I**N this category success or failure of the aerosol is more difficult to predict. The value of convenience must be carefully weighed against the increase in cost. The balance of these two factors will determine the market appeal of the product.

A product's success or failure in the American market permits no conclusions concerning its chances in the European market. Conditions in the United States differ in many respects from those prevail-

ing in Europe. *First:* Cost of products making up the aerosol are generally lower in America. Containers and valves are made in the U.S. and do not have to be imported. Generally, a product is placed on the American market with a comparatively low profit margin. This is feasible because of the size of the market. By contrast, the retail prices in some Western European countries are disproportionately high. *Second:* The American consumer commands buying power far superior to that of his European counterpart. In Germany a can of aerosol shave lather costing DM 4.00 (95 cents) takes approximately four percent of a worker's weekly wage. In the United States the same can costs around 75 cents which represents less than one percent of the worker's weekly wage in that country. Obviously, the German will think more carefully than the American before buying the aerosol can of shave lather, especially since other products serving the same purpose are available at a lower price. Finally, the German will consider a pressure package an uneconomical proposition because the beautiful heavy can with the expensive valve is not reusable. When its contents have been consumed it can only be thrown out. An American public, long accustomed to disposing of products after one use, will not waste any scruples on such problems.

When comparing the American and the Western European markets one must remember the psychology of the consumer, which is closely linked to his purchasing power. The conservatism of the European purchaser has frequently been exaggerated. But he certainly does not share the American's belief that all that is novel is good or at least worth trying. The American approach has been fostered by exposure to advertising over many years. For instance, if you present to the average American an effectively packaged shoe cleaner which does not require laborious application by cloth or

brush but is simply sprayed on the leather, he will be carried away by the novelty of the idea much more readily than his European counterpart, who first stops to ask skeptically: How much is this bit of fun going to cost me?

This comparison of the two markets is not drawn with the intention of proving that the European market holds no future for the pressure packaged product in which the aerosol feature is, in a certain sense, a luxury feature. But we wish to point out that the fate of a certain product in the American market is no reliable indicator to its future in the European market. Careful consideration of the prospective consumer's mental attitude is essential to the market forecast. To illustrate this, a few important cosmetic products will be considered. The technical questions involved will be disregarded and market possibilities of items, assumed to be perfected, will be analyzed.

### **Shave Products**

**T**HE aerosol combines advantages of lathering shave soap (holds up hair, gives traditional feeling of well being) with the convenience of the non-lathering cream (no brush, economy in time). Novelty and the element of surprise are added to these practical advantages. "In every true man there is a child, and the child wants to play," says Nietzsche. The child hidden in man (let us be honest) delights in seeing such large quantities of lather coming out of such a small can. This element of wonder is certainly a strong addition to the appeal of the aerosol shave product, as long as it is a novelty.

The above factors have greatly popularized the aerosol shave in the United States. This item could enjoy equal popularity in Western Europe if its disproportionately high price did not handicap its growth. While the cost per shave with an aerosol cream is so much higher than with

(Turn to Page 227)

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Same formula, but with 2% methoxychlor substituted for DDT	22	<u>51</u>	<u>80</u>	85
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Note the great boost that methoxychlor gives to middle and late knockdown. It can do the same for your formula and at very low expense. Contact the district office nearest you.

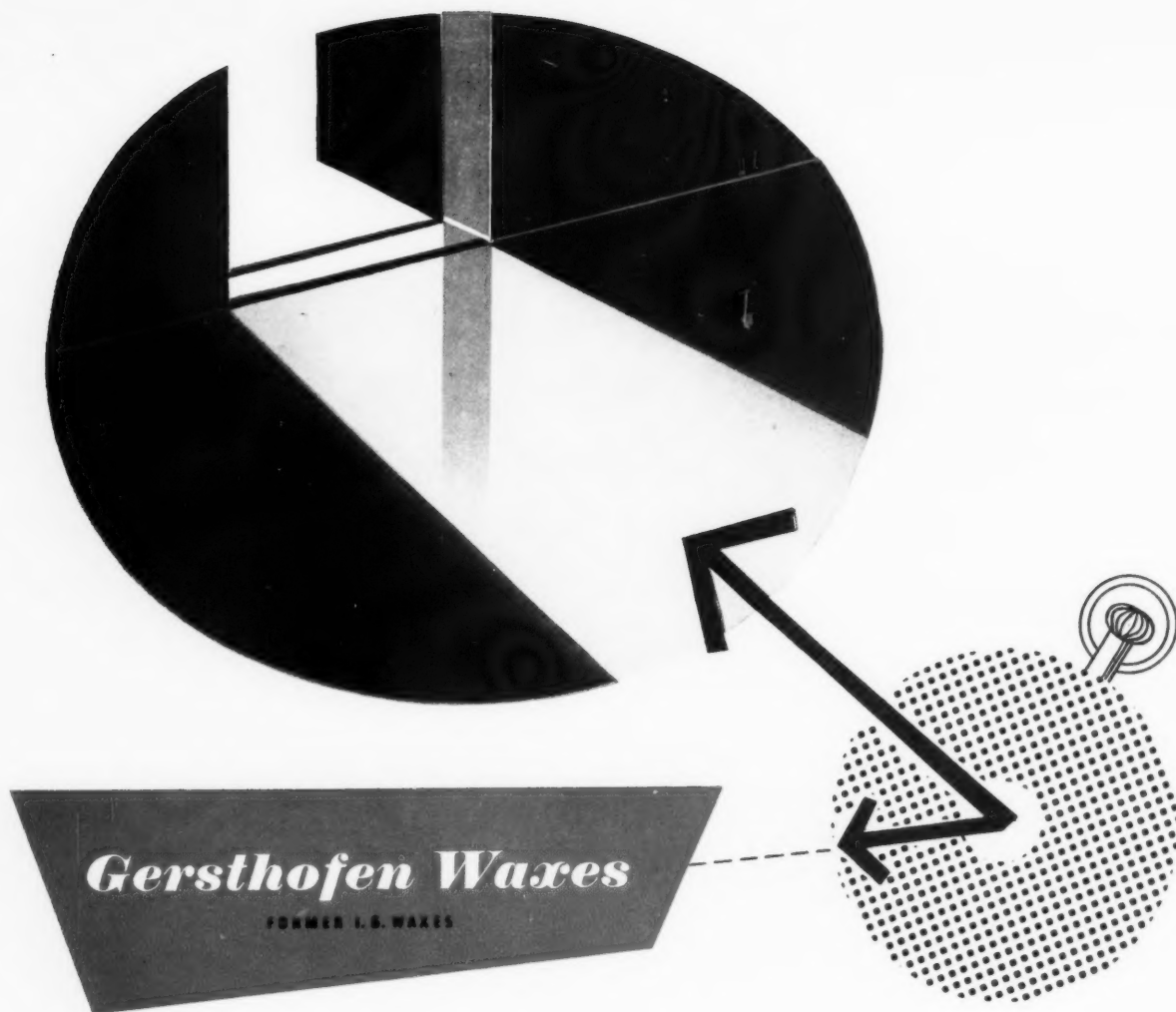
\*The basic formula is a widely sold, low-priced aerosol containing synergized allethrin, another KD agent, plus 2% DDT.

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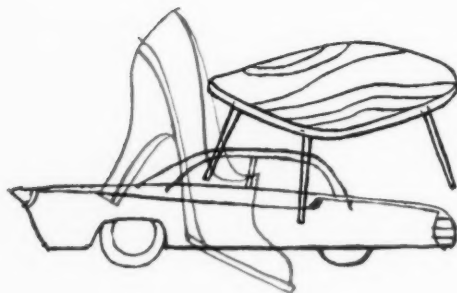
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Exterior view of Tampa, Fla., plant of Odorite Chemical Industries, Inc., shown in upper photo. Truck deliveries are made on left side

of building under overhang. Railroad siding is on right side. Odorite sales force in lower photo is lined up in yard of the plant.

**Building materials short so he makes**

## Switch to Chemical Specialties

**C**ID FERNANDEZ, owner of the Odorite Chemical Industries, Inc. of Tampa, Florida, would be a very successful building contractor today if he hadn't become disgusted with, 'Sorry, haven't any,' when he tried to buy building materials after the end of World War II. Instead, he turned to offering cleaning service and sanitary chemicals to the commercial firms of Tampa, Florida. Today, after nine years in this field, he has become a major leader in supplying janitorial maintenance

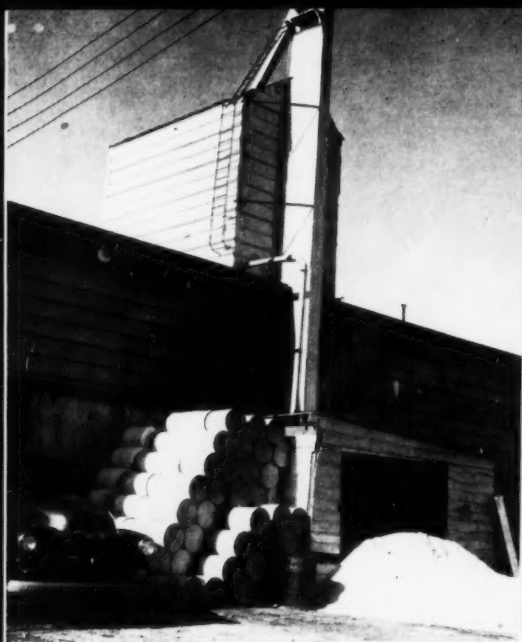
chemicals to industries and businesses in the Southeast.

In 1947 Fernandez became deeply interested in the sanitary

cleaning field when he talked with a long time friend who convinced him of the opportunities that existed in Tampa. After investigating the



Standing in front of pallet load of "Grip-Gloss" terrazzo cleaner is Cid Fernandez (left) discussing problem with salesman James Valenti, who travels eastern seaboard and as far west as Chicago, calling on terrazzo contractors.



Another view of the Odorite plant (upper left) shows pile of wood shavings used for making sweeping compound. Shavings are shovelled into hammer mill under wooden shed. After being



ground and screened, sawdust is conveyed to storage bin on roof for future use. Industrial truck (center) stacks pallet load of "Dunk-It." Right: new 1,300 gallon stainless steel mixing tank.



possibilities, Mr. Fernandez opened his new venture in November, 1947. He offered restroom cleaning service and a disinfectant of his own manufacture to canning factories and restaurants for the purpose of keeping mold count down. His company, on opening day, consisted of his wife, Margaret, and his brother, Larry, and their plant was a small rented building in Tampa's Spanish section, Ybor City.

Business expanded and Mr. Fernandez developed a bowl cleaner in addition to his disinfectant. He was still forced to buy all his other materials and in doing so became a jobber. Lack of space soon became a problem and a larger plant was sought. Mr. Fernandez found

a site on the north side of Tampa and constructed his own building.

His first move was then made, only seven months after he entered the new field. This gave him access to 2400 square feet of floor space but daily he saw he would need even more as he was adding more products to his own line and gradually dropping items he was jobbing. Alterations increased his original area to 5500 square feet.

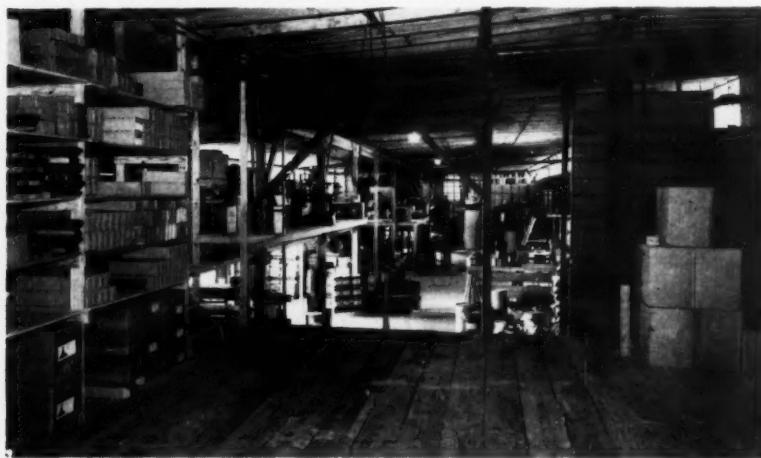
As time advanced the demand for Odorite products was reaching the point where his manufacturing facilities were unable to keep up with the market demand. Again, the problem of space. Mr. Fernandez then selected his pres-

ent site which offers room for expansion, has its own railroad siding and is located out of the residential area in the northeast part of Ybor City. The plant had 14,000 square feet of floor space when he moved in 1953 and today he has increased his useable space to 22,000 by additions to the building and employing different methods of storing stock and raw materials and putting his mixing tanks overhead rather than on the floor.

The outstanding changes Fernandez made in his plant to obtain more floor space were: (1) stacking raw materials and stock on pallets; (2) building bins to hold all drums. Bins are so constructed as to allow loaded pallets to be stored in them if space is needed; (3) moving his tanks from the main floor up into overhead platforms; (4) building underground tanks to hold liquids; (5) installing an outside conveyor which carries saw dust to a storage bin on the roof.

His underground tanks, of which he has four of 4000-gallon capacity and one of 2000-gallon capacity, are filled directly from tank cars spotted on his own siding. For making sweeping compound, Mr. Fernandez has installed a conveyor, which he says has brought many inquiries and has

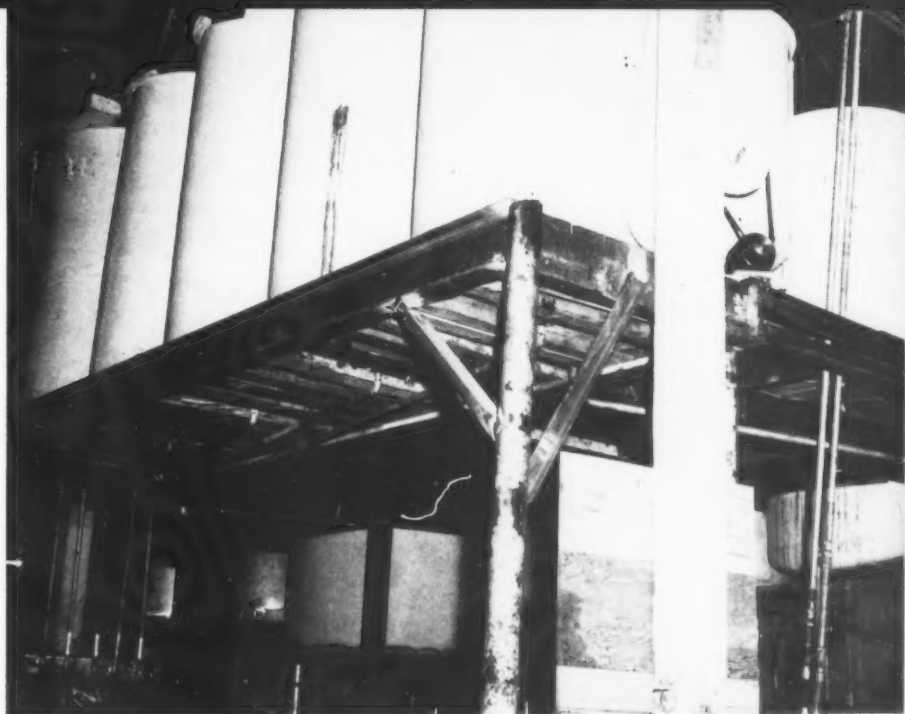
Photo below was taken from janitorial maintenance supply room looking west into the plant. Odorite plant offices are forward and below this area.





been inspected many times. The process for making sweeping compounds consists of a hammer mill, conveyor, storage bin of 200 drums capacity, and a vat filling hopper. In operation, the wood shavings are hand shovelled into the hammer mill, ground and screened to a uniform size, then conveyed up into the storage bin on the roof. A trap door in the roof storage bin is opened to fill the hopper inside the building. From there the sawdust is funneled into the mixing vat. The other materials are piped into the mixing vat automatically, and after the manufacturing cycle is complete, the sweeping compound is bagged underneath the platform which supports the vat.

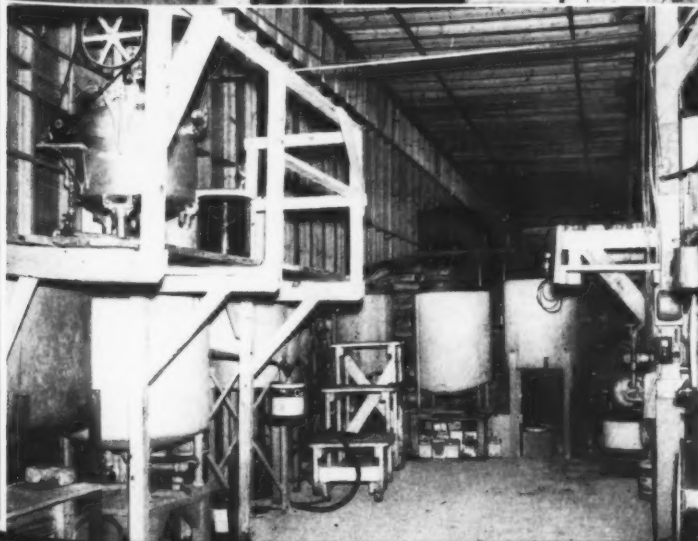
Three of the leading prod-  
(Turn to Page 227)

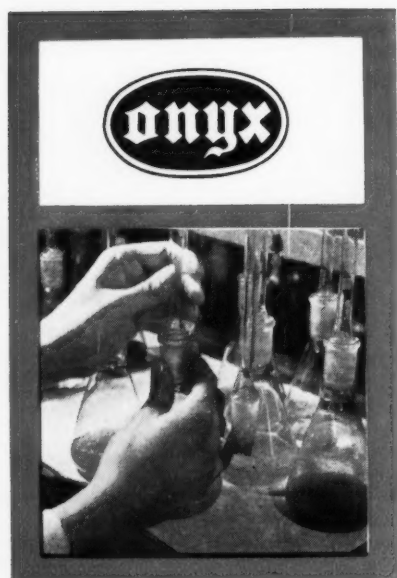


Five of the 600 gallon mixing tanks on elevated platform in Odorite plant are shown above. Three of the firm's four 1,300 gallon tanks may be seen below the platform.

Curtis Shirley (top, left) removes drum of raw material from one of the plant's pipe bins. If space is needed, bins can hold pallets loaded with raw or finished materials. Cartons of metal containers are being loaded in top right photo. Mixing tanks in background

were originally set at floor level, but have been elevated to obtain more floor space. Wax manufacturing area (bottom, left) before tanks and other equipment were elevated. A battery of five 600-gallon mixing tanks are shown in the photograph at bottom right.





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## Clay Defends Merger

Lucius D. Clay, chairman of the board of directors of Continental Can Co., New York, issued a statement last month regarding the suit filed Oct. 30, by the Department of Justice to compel Continental to divest itself of Robert Gair Division, New York. The two companies merged Oct. 26. Complete text of the statement follows:

"We regret that the government has seen fit to file this suit against the Continental Can Co., particularly as there has been no discussion on this question between the companies concerned and the government, although the government was advised of the proposed merger many weeks ago.

"The management of Continental Can Co. and its counsel are convinced that the merger of the two companies violates neither the letter or the spirit of the anti-trust laws. It creates no conditions, competitive or commercial, which can by any reasonable standards be called those of monopoly; nor does it measurably lessen competition in the product areas served by Continental Can Co. We realize that the Court is the proper forum for our response to the allegations in the complaint. However, in view of the fact that the then Acting Attorney General and the Assistant Attorney General for Anti-Trust both saw fit to make public statements, we feel it necessary to point out that the complaint of the government as presented to the Court is a maze of allegations and unrelated facts.

"First, the allegation with respect to interlocking directorates because of holdings of Owens-Illinois representing about three percent of the stock of Continental Can Co., and holdings by the Continental Can Co. representing two percent of the stock of Knox Glass Co., completely ignores the steps taken and in process for the orderly disposal of these stock interests—facts which were fully known by the Department of Justice.

"Second, prior to the merger, the Department of Justice was given data which demonstrates that the areas of alleged competition were of minor importance in scope and dollar value, both as percentages of the industries concerned and of the activities of the two companies.

"The main allegation of the Department of Justice seems to be that the merger creates a company with such a broad coverage of the various products in the packaging field that it will tend to stifle competition. We can find nothing in the anti-trust laws which supports the thesis that it is illegal to present the customer with a broad range of related products.

"I cannot help but conclude that a new and vague legal philosophy is now governing the actions of some of the lawyers of the Department of Justice in the anti-trust field. If this philosophy is to govern, it will be a major factor in future American business activities. We are convinced that this new philosophy which

these lawyers of the Department of Justice are apparently trying to read into the law will become, as this case progresses, recognizable as a new philosophy and we hope, repudiated by the courts, once and for all."

★

## In New Lehn & Fink Post

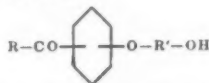
Allen Diefenderfer, Jr., has been named assistant eastern regional sales manager of the Lehn & Fink Division of Lehn & Fink Products Corp., New York, it was announced last month by O. G. Kennedy division general manager. In his new post, Mr. Diefenderfer will help supervise the marketing of "Lysol" disinfectant and "Eti-quet" deodorants. Mr. Diefenderfer joined Lehn & Fink in January, 1955 as a territorial representative in Philadelphia. He previously had been associated with Cook & Co.

## New Patents

(From Page 97)

hydroxy group attached thereto; agitating for at least one-half hour to effect coagulation of the sulfate salt particles therein, and then filtering the admixture to remove the coagulated salt particles therein.

**No. 2,768,956. Detergent Compositions,** patented by Alan Dalton Scott, Bebington, England, assignor to Lever Brothers Company, New York, N. Y. A detergent composition here described consists essentially of an alkyl aryl sulfonate detergent and from 1 to 30% by weight of the detergent of a non-detergent compound which improves the persistence during washing of the lather given by aqueous solutions of the composition at the concentrations of detergent normally employed, said compound being an acyl phenol monoether having the general formula:



R-CO being an acyl radical derived from a saturated fatty acid and containing in all between six and ten carbon atoms and R'-OH being a radical derived from a polyhydric alcohol having from two to four carbon atoms selected from the group consisting of ethylene glycol, glycerol and diethylene glycol.

**No. 2,768,111. Emulsifiable Insecticidal Concentrates,** patented by Harry S. Butler and Clarence C. Harvey, Jr., Baton Rouge, La., assignors to Ethyl Corp., New York, N. Y. The patent describes an emulsifiable insecticidal concentrate, comprising a chlorinated insecticide, a non-polar solvent for said insecticide, and a polar solvent for said insecticide,

the weight ratio of non-polar: polar solvent being between 8:1 and 1:2, said concentrate having water present in a concentration not exceeding 0.2 percent by weight of the concentrate.

**No. 2,768,926. Cumene Hydroperoxide Insect Repellent Compositions and Method,** patented by Lyle D. Goodhue, Bartlesville, Okla., assignor to Phillips Petroleum Co. A method is described of repelling an insect which comprises applying to the place from which the insect is to be repelled a repellent comprising cumene hydroperoxide in an amount effective to repel said insect.

**No. 2,766,212. Detergents,** patented by Richard A. Grifo, Easton, Pa., assignor to General Aniline & Film Corporation, New York, N. Y. This patent claims a composition consisting essentially of a compound of the formula:



X

in which R is a hydrocarbon radical containing from about 10 to 24 carbon atoms selected from the group consisting of alkyl radicals containing a plurality of branches chains, and alkylaryl radicals, X is selected from the group consisting of H and CH<sub>3</sub>, M is a monovalent water-solubilizing cation, and n is from 1 to 8, and about 5 to 50% by weight thereof of a water soluble salt of a polyvalent metal wherein said metal is selected from the group consisting of magnesium, calcium, iron and aluminum.

**No. 2,765,255. Insecticidal Emulsion Concentrates,** patented by Thomas Swarbrick, Dundee, Scotland, assignor to Shell Development Co., Emeryville, Calif. A stable, flowable, water-dispersible insecticidal concentrate composition is claimed having a consistency of at least about 100 decimillimeters and comprising a solid insecticide finely divided into particles of less than 100 microns in size, said particles being suspended within an intimately admixed liquid dispersion of water and an essentially water-insoluble organic liquid, the water in said concentrate comprising less than about 25% by weight of the concentrate, the organic liquid in said liquid dispersion being the continuous phase, said insecticide being substantially insoluble in water and in said organic liquid, said concentrate also containing an emulsifier adapted to stabilize the concentrate and to promote dispersion of said concentrate in water to form an emulsion in which the aqueous phase containing separately dispersed solid particles is the continuous phase.

**No. 2,766,298. Manufacture of DDT,** patented by David B. Guthrie, St. Louis, and William S. Knowles, Kirkwood, Mo., assignors to Monsanto Chemical Co., St. Louis, Mo. In the process for preparing 2,2-bis (p-chlorophenyl)-1,1,1-trichloroethane by the condensation of chloral with monochlorobenzene in the presence of sulfuric acid this patent claims the steps comprising condensing substantially stoichiometric proportions of mono



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- impart a pleasant, lasting fragrance which gives vigorous sales appeal to your product

**T**HE repellent odor of an insecticide can kill a sale as easily as the product itself kills insects. MM&R research chemists, convinced that the odor of most insecticides is *unnecessarily* offensive to the user, have developed a series of specialty perfume oil-neutralizers which replace the odor of basic materials with pleasant sales-stimulating fragrances.

If your product contains a *combination* of toxic agents, MM&R chemists will recommend a perfume oil-neutralizer exactly suited to your formulation. Send us a sample of your insecticide today. Our chemists will send it back to you "perfume styled" for added sales appeal. No obligation, of course.

Neutralizers and deodorants by MM&R are also available *without* added perfume for use in food and milk processing plants, dairies, restaurant kitchens and wherever an un-perfumed insecticide is required.

*Which of these toxic agents does your product contain? Mail your order for the corresponding MM&R Perfume Oil-Neutralizer, available in 5 lb. and 28 lb. containers.*

**BENZENE HEXACHLORIDE** — Neutralized by Perfume Oil Grape Bouquet MM&R or Neutralizer D.O. 622 MM&R. (1 oz. to 1 or 2 gals. B.H.C.)

**CHLORDANE** — Use Neutralizer D.O. 622 MM&R or Neutralizer Bordane MM&R. (1 oz. to 2 to 4 gals. Chlordane)

**DDT** — Sprays containing DDT can be pleasantly perfumed with Deodorant L-37 MM&R, Neutralizer 202 MM&R, Perfume Oil B.L.S. MM&R and by many other MM&R specialties. (1 oz. to 6 gals. spray)

**LETHANE** — Perfume Oil Fruitberry MM&R, Perfume Oil Sweetgrass MM&R, Neutralizer 202 MM&R, Deodorant L-37 MM&R should be used. (1½ oz. to 1 gal. Lethane)

**LINDANE** — Same recommendations as for Chlordane.

**PENTACHLOROPHENOL** — Neutralizer 202 MM&R is effective for oil solutions. For aqueous solutions use W.S. Neutralizer 202-41.

**PYRETHRUM** — See recommendations for DDT.

**THANITE** — Same recommendations as for Lethane.

**VELSICOL** — Employ Deodorant L-37 MM&R or Deodorant L-44 MM&R. (1 oz. to 1 gal. Velsicol)

**KEROSENE** — If regular kerosene is used in the formulation of your insecticide, first add 1 oz. Neutralizer 801 MM&R to each 8 gals.

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chlorobenzene and chloral in the presence of concentrated sulfuric acid, heating the reaction mixture resulting from said condensation to a temperature of from about 35° C. to about the incipient melting point of the 2,2-bis(p-chlorophenyl) 1,1,1-trichloroethane product until the acid layer is clear, allowing the resulting mixture to settle thereby forming a layer containing the solid 2,2-bis(p-chlorophenyl) 1,1,1-trichloroethane product and a lower layer of acid, and withdrawing the acid layer.

### Soap Plant Observer

(From Page 107)

its place in specialized applications. On the other hand, it should appear obvious (surely) to washing machine manufacturers that the old style swish-swash or tumble-over types of agitation in household machines are not going to last. The writer feels that vibratory sources of agitation, mentioned from time to time here, are going to be the modern way of washing, just as the cars of the future will be electronically controlled.

\* \* \*

**H**AVE you ever looked at a pipe and wondered if the liquid were pumping and how fast? If so, a little gadget by Walker, Crossweller & Co., Ltd., of England will help. (American distributors, McIntosh Equipment Corp., 15 Park Row, New York 38.) The device consists of a unit inserted in a line which has a tough glass dome through which a chromium ring can be seen. The flow of liquid or gas through the pipe hits a turbine type vane which spins the ring. Buy one and put it on your evaporator feed line, glycerine drum filling line or what have you!

Oh yes, the spinning vane can be used in other, perhaps more costly ways. Potter Aeronautical Co. of Union, N. J., inserts a permanent magnet in a spinning vane, which is held horizontally in pipe. A sensing element attached to the outside of the pipe consists of a coil which is charged with electric current by the whirling bobbin. Current may be measured very accurately and can be made to register the flow directly in gallons, cubic feet, pounds, etc. This device can be used as a feed back

on a servo control unit to activate the flow process and therefore regulate it. An operator of a fatty acid still could thus coordinate his distillate output to the crude acid input to give accurate reflux conditions irrespective of the reasonable variations in overall rate of flow.

This type of flow control could also be helpful in the continuous solvent separation of fatty acids where variable rate of flow upsets the heat balance. Here, the input flow of refrigerants would be coupled as a feed back to the input flow of fatty acid so that the ratio of crude acid to refrigerant would be held constant irrespective of normal production variations.

\* \* \*

**N**EWSPAPER consumer reports used to be important in indicating trends in consumer buying habits before supplementary sources were available. Except for pinpoint information as to advertising and sales media, this data is no longer as important to detergent market researchers as in the past, principally because the information is fairly well known now, or can be obtained from other, better sources. It has been some years now since the writer has taken time out to study such reports.

A recent summary covering a 1956 21-market survey by leading newspapers, however, is of some interest in indicating trends. For example, in the home laundry field the swing to synthetics is almost complete. Soap is holding its own only as pure flakes for use in the washing of fine fabrics.

To a small extent, soap flakes and some powders survive for dishwashing. No doubt the housewife who does her dishes by hand, still feels she doesn't want "detergent hands."

Liquid detergents are growing in importance. The newer type heavy duty liquids like "Whisk" have not been on the market long enough to be reflected in this survey, but the guess here is that their presence will be felt in the home laundry machine field

and possibly to some extent in the mechanical dishwashing field.

Soaps for toilet use are still holding their own and synthetic bars are apparently dormant at the moment. Regular shaving creams have almost disappeared in favor of brushless and pressure can creams. The latter have doubled in two years! The leaders are "Palmolive Rapid Shave," "Mennen's Foam," "Aero Shave," and "Rise." 15 brands are listed in all.


















### Insect Problems

(From Page 197)

coastal areas as well as inland and mountain regions. Many species of the genera *Tabanus* and *Chrysops* are vicious and persistent biters and are sometimes involved in the transmission of anthrax and tularemia. Too little is known about the biology of tabanids, and relatively little has been done on the development of control measures, although insecticides and repellents have been used to some extent.

Blackflies (Simuliidae) plague fishermen and vacationers in mountainous areas, such as the Adirondacks, and outbreaks have even occurred in southern cities adjacent to river breeding areas. Although blackflies are vectors of onchocerciasis in Latin America, their public health importance in this country is due to their painful and irritating bites which cause local swelling and occasional severe complications. Application of DDT to the breeding streams has given effective control, and repellents are used to a considerable extent for personal protection. The group needs more investigative attention.

A group of tiny biting midges (Heleidae, formerly Ceratopogonidae) known as punkies, no-see-ums, sand flies, or black gnats cause severe human annoyance in many parts of the country. Sand flies (*Culicoides* spp.) breed in unbelievable numbers along the Atlantic Coast and rival salt marsh mosquitoes as the most important insect pests of humans in the area. Their attacks are made even more

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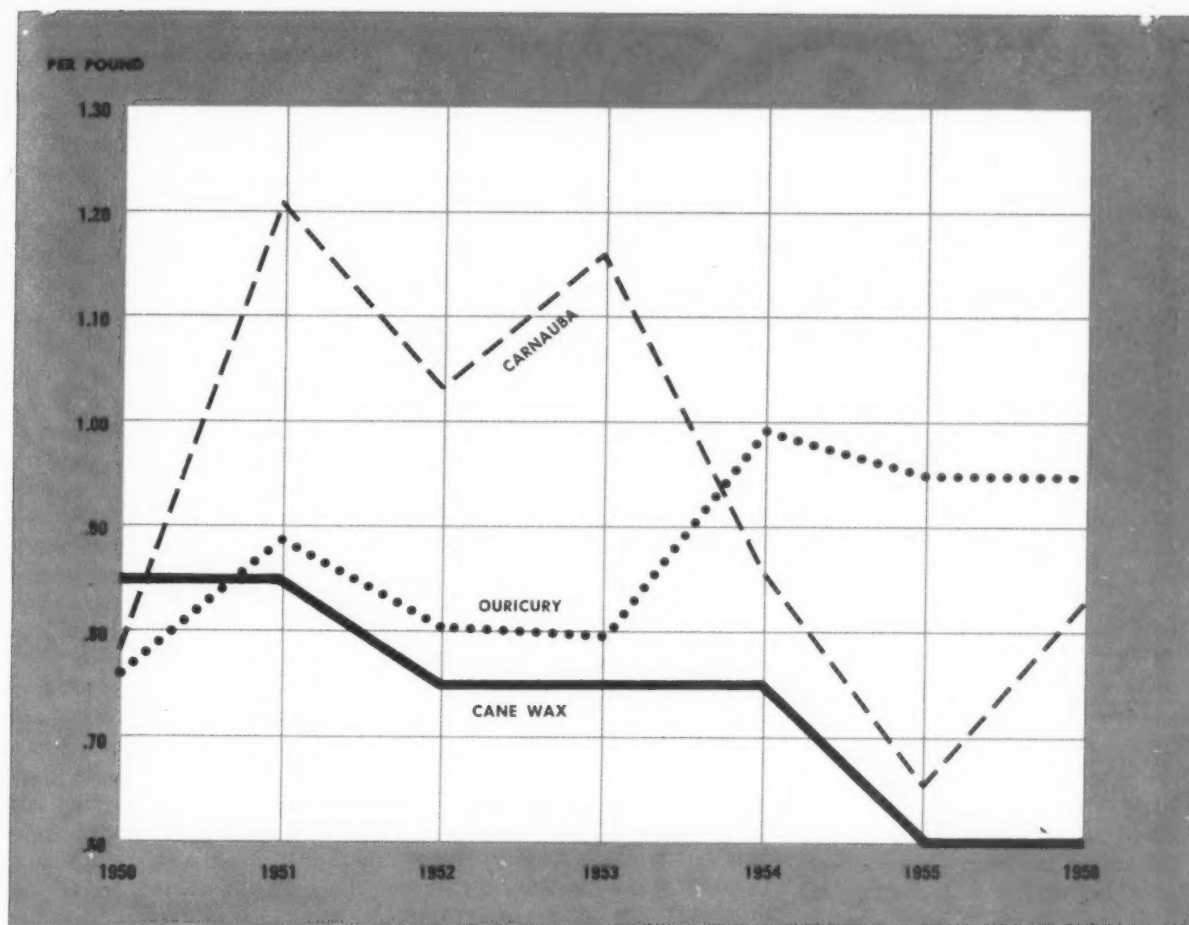
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aggravating by the fact that they can readily penetrate ordinary screening, and they will even pass through air conditioning filters to bite people within houses! Other species, commonly called "no-see-ums," cause severe annoyance to fishermen and campers along mountain streams in the Northeast. In the West, the valley black gnat (*Leptoconops torrens*), the Bodega black gnat (*Leptoconops kertezi*), and *Ceratopogen stellifer* are vicious biters. Bites of these gnats are intensely irritating and may produce vesicles which rupture and form open lesions. Application of insecticides to the breeding area, treatment of window screens, use of repellents, and elimination of breeding places have been used as methods of control. Much more research is needed on the biology and control of this group of pests.

The stable fly or dog fly (*Stomoxys calcitrans*) is widely distributed and similar in general appearance to the common housefly; for this reason, it is sometimes called the "biting house fly." Since it does not have the housefly's strong predilection for excrement and garbage, it probably is not involved in the transmission of filth diseases; however, since it is a vicious biter of man and domestic animals, it has been suspected of transmitting a number of diseases. Stable flies may breed in natural accumulations of vegetative wastes, such as piles of sea weed; but they are also produced in great numbers in man-made breeding places such as old straw stacks, manure mixed with straw, or piles of fermenting weeds, grass, peanut litter, grain, alfalfa, onions, celery, or other vegetable wastes. Stable flies are susceptible to insecticidal control, but proper handling and disposal of vegetable wastes should play a major role.

There are a few other biting fly problems of less significance such as the biting snipe flies (*Symphoromyia* spp.). As with most of the problems, too little is known about the life history and habits of the species involved.

(To be concluded)



## The Truth About Wax Prices!

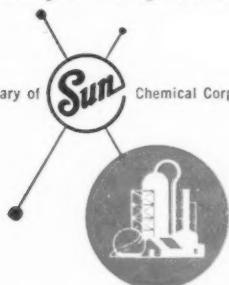
The chart gives you a clear picture of the steady, dependable price structure of Cane Wax compared to the wide fluctuation of Carnauba and Ouricury which can create such serious buying problems. And that's not all, the world's largest group of wax scientists has recently developed cane waxes that offer users completely new opportunities for economy and standards of quality in their products. WARWICK WAX COMPANY offers you complete technical information and expert laboratory assistance in implementing these new waxes in your formulations.

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## Mercurials as Disinfectants

(From Page 205)

less to negligible residual activity appeared to be left, indicating that the chemical was tied up by the protein of the biological or otherwise inactivated. A check on a series of over one thousand bottles of various biologicals from clinics obtained after use revealed that up to five percent contained microorganisms. This would suggest that once these biologicals are in the hands of the users a problem still exists.

Regarding preservatives, one of the real problems existing in hospitals and clinics is the need for good preservatives in the routine eye dilators and nasal preparations of the decongestant type. Routine checks of these indicate a high percentage of contaminated solutions. In one instance we had direct evidence of upper respiratory cross-infection from the use of a common nasal dropper preparation in a clinic.

The toxicity of chemicals used as drugs on or in the body has been of considerable interest since man first began exposing himself to various chemicals many years ago. Unfortunately there have not been good techniques for toxicity determinations of certain types of chemicals which might be really indicative of toxicity for humans.

In the past, various techniques have been employed for testing the toxicity of skin antiseptics with more or less success. These tests have included toxicity tests in and on animals such as mice, in embryonic eggs, on leukocytes and in embryonic chick tissue culture using heart or spleen(6). Each of these tests have had advantages and disadvantages. The obvious one enjoyed by all is that they are not a true test of toxicity of the chemical for human skin tissue cells. Recently the opportunity offered itself for perhaps a more significant test procedure.

A few years ago in the tissue culture laboratory of the Univer-



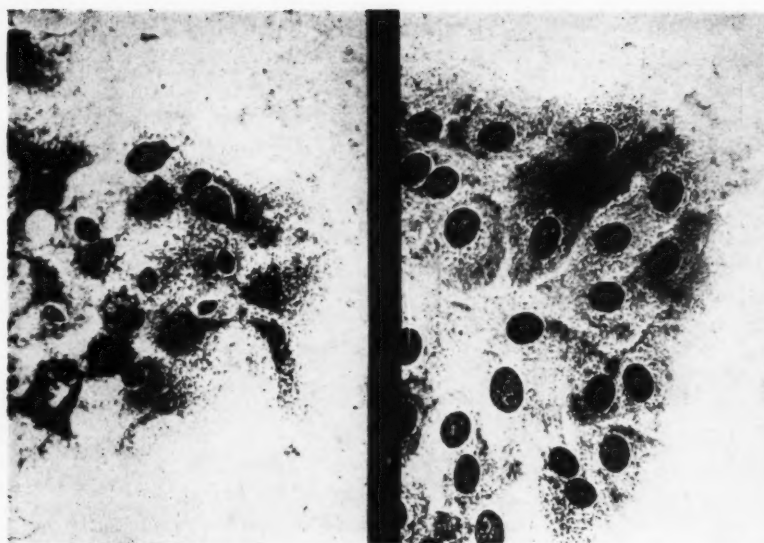


Figure 11. A highly magnified view of skin tissue culture showing epithelial cells.

day). Figure 12 indicates the negative 1+, 3+ and 4+ outgrowth. From this data two values were determined, one the MID or minimal inhibiting dose—the smallest amount of chemical required to produce total inhibition of outgrowth and the second the LID the least injurious dose (the quantity of drug giving the slightest amount of injury as compared with the untreated control cultures). Thus we can set up a range of toxicity for any given drug. All drug concentrations given here are in gammas per ml of culture media.

In Fig. 13 are shown some of the early studies carried out by Dr. Pomerat's laboratory [in conjunction with the dermatology department under Clarence Livingston(10)], with antibiotics and shown here for comparison purposes. For reference if you wish (10,000 gammas = one percent). It is of interest to note the low level of toxicity that we might expect for penicillin. Bacitracin, one of those considered dangerous parenterally, is not toxic for the skin and it is used frequently as a local antibiotic without apparent difficulty. The same is true of neomycin. The cycline antibiotics here show an increased or high toxicity for the skin tissue cells. In Graph 14 note that our concentration showing toxicity

is dropping. Another list of materials is shown here showing varying toxicity. As we progress from right to left increasing toxicity is demonstrated. Of particular interest here is phenol to use as a guide. It is usually used as a five percent preparation which is fairly toxic for skin. Here we show that 1000 gammas per ml. (0.1 percent) is toxic for the cells. We might point out here some recent data which is not shown in the graph. That is the data on iodine. We have found the MID to be between 833-416 micrograms per ml and the LID between 13 and 7.5 micrograms per ml. It should be noted that furacin shows up to be quite toxic—as has been shown by experience. A representative quaternary ammonium compound (Zephiran) appears highly toxic. Graph 15 compares mercurial compounds and shows how they fit in with other compounds in toxicity. It should be

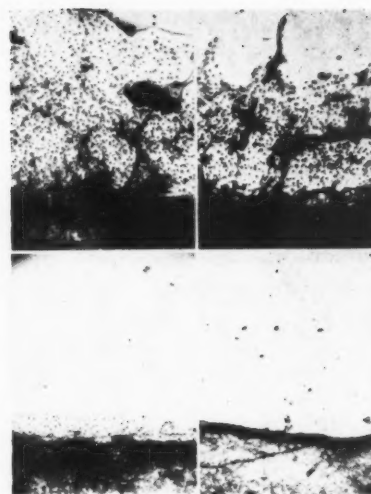
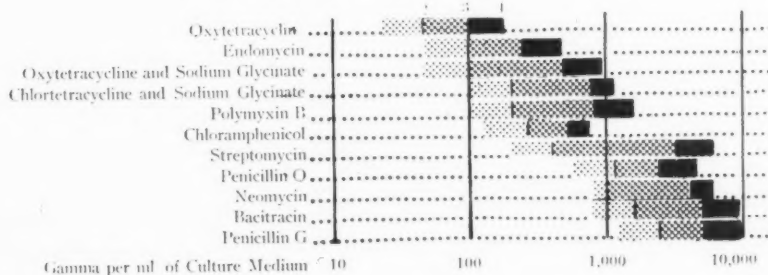


Figure 12. Magnified views of skin tissue culture showing 4+, 3+, 1+ and negative growth from top left to lower right.

noted that furacin, gramicidin and Zephiran are in the same general range. Mercurochrome appears to be the least toxic ranging down through merthiolate. It should be kept in mind that its concentration of use is two percent while the others are usually 1:1000. One point should be made here. Bichloride of mercury has always been pointed out as an extremely toxic mercurial and the organic mercurials were supposed to be much less toxic but according to these data we find bichloride right in the middle of the organic mercurials in regard to cell toxicity.

In the course of these studies the question arose as to how this test on skin compared with the use of other tissues. Was skin as sensitive or less sensitive in a test. Graph 16 compares bichloride of mercury on several other tissues with skin. Here it is shown that skin is more sensitive than cord, heart or spleen tissue cells.

Figure 13. Toxicity of antibiotics on human skin.



put **SHINE** in your polish

## with BARECO MICROCRYSTALLINE WAXES\*

\*Regular, oxidized and wax-resin blends.

Bareco waxes have been used by leading polish manufacturers for many years. This wide acceptance has enabled Bareco to specialize in the refining of microcrystalline waxes with the polish-makers' needs as a definite objective. Because of this specialization, the use of Bareco wax products not only assures better polish characteristics; it provides them economically.

Here is a partial listing  
of Bareco polish waxes  
and their specifications:

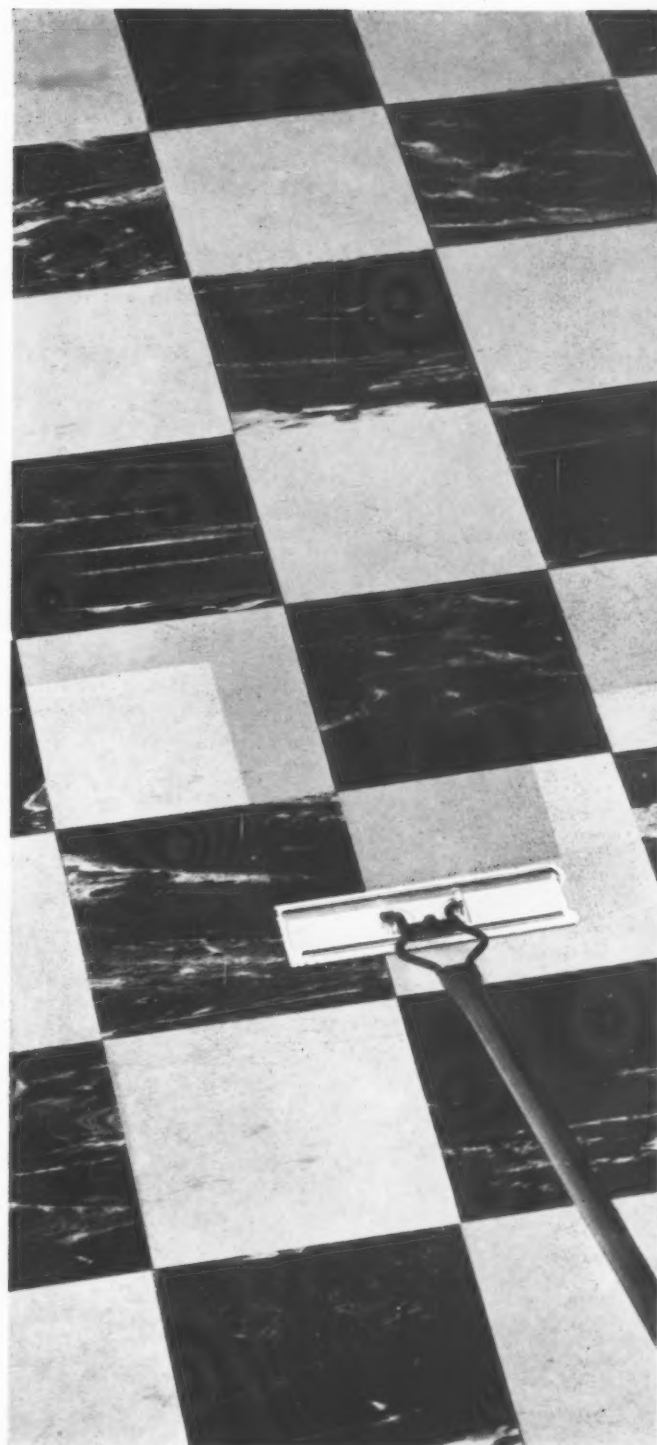
BARECO WAX	MELTING POINT °F.	PENE- TRATION	COLOR N.P.A.	ACID NUMBER	SAPON. NUMBER
Petrolite C-700	190 Min.	4 Max.	1½ Max.	Nil	Nil
B-Square 190 A	190/195	2-7	1½ Max.	Nil	Nil
Petrolite C-1035	195 Min.	2 Max.	1½ Max.	Nil	Nil
Petronauba D	185 Min.	5 Max.	6 Max.	20-28	50-60
Petrolite C-15	180 Min.	4-6	4-5	15-17	45-55
Petrolite C-23	180 Min.	4-6	4-5	20-25	55-65
Petrolite C-36	180 Min.	5-7	4-6	30-35	75-85
Petrolite PE 100	195-200	2-3	4-6	15-20	45-55
Petrolite R 50*	190-200	2 Max.	4½ Max.	40-50	65-80
Petrolite P 20	210-220	2 Max.	3 Max.	Nil	Nil



### BARECO WAX COMPANY

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BOX 2009, TULSA, OKLAHOMA

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## CYANURIC ACID AND ITS CHLORINATED DERIVATIVES NOW AVAILABLE!

For those specialized applications where the greater reactivity of chlorinated cyanuric acid is indicated, WYMAT brings a high purity product ideal for household cleanser formulations. WYMAT'S new exclusive process makes possible a high purity cyanuric acid—white in color—free of objectionable phenolic odors.

## HYCHLOR

A high purity brand of 1,3 dichloro-5, 5 dimethylhydantoin.

A source of available chlorine for dry laundry bleaches, disinfectants, sanitizers, pool treatments, etc. Where a stable source of available chlorine is indicated for compounding—consider HYCHLOR.

## HYCHLOR-T

A specially processed form of HYCHLOR combined with a hydrotrope—a product particularly designed to promote the rapid release of available chlorine at time of use in cold water. A product exclusive with WYMAT that enables great economies in compounding as a consequence of better utilization of the organically bound chlorine.

## CYCLOGEN-D-11

A crystalline dimethylhydantoin as an intermediate in the manufacture of paper finishing and fabric processing chemicals.

## MAIL COUPON TODAY!

**WYMAT CHEMICAL CORPORATION**  
**P.O. BOX 72 • HARRISON, N. J.**

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Gentlemen:

Please send data \_\_\_\_\_ regarding  
(Name of Product)  
the following process (or problem): \_\_\_\_\_

☐ Send a sample for evaluation. ☐ Send suggested formulations.  
☐ Send price list. ☐ Have a Wymat representative call on me.

NAME \_\_\_\_\_ TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

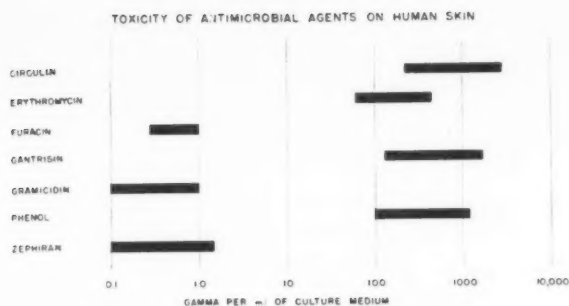
CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

# WYMAT

**CHEMICAL CORPORATION**

**P.O. BOX 72 • HARRISON, N. J**





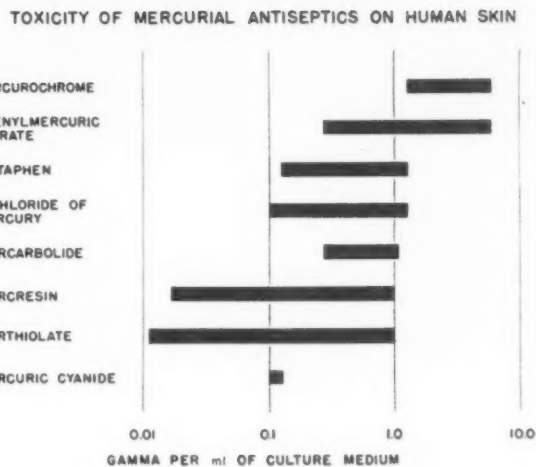
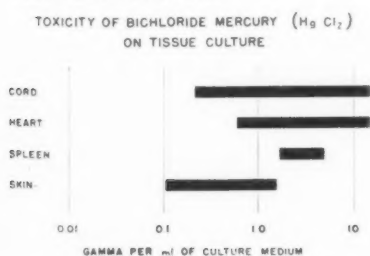
Graph 14. Toxicity of antimicrobials on human skin.

In summary on the toxicity studies we can say that: a. human skin tissue culture may be used to compare and evaluate the toxicity of antiseptics and disinfectants in the test tube. b. mercurial antiseptics proved to be more toxic than the antibiotics in common usage but in the same range of toxicity as representative furan derivatives and quaternary ammonium (detergent) antiseptics. c. bichloride of mercury appears no more toxic by this test than organic mercurials. d. the procedure offers a better index of toxicity than testing on animals, animal tissues, chick embryos, white blood cells or other procedures now available.

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Graph 16. Toxicity of bichloride mercury ( $HgCl_2$ ) on tissue culture.



Graph 15. Toxicity of mercurial antiseptics on human skin.

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## Wax from South Africa (From Page 183)

structure conventional paraffin waxes made from petroleum. Other points of resemblance are white color, brittleness, and low viscosity when melted.

The product differs from conventional paraffin waxes in high temperature characteristics and in crystal size. Crystals are much finer and more like those of petroleum-derived microcrystalline waxes than of paraffin. Melting point is 215°F, compared with 150°F for the upper limit of paraffin waxes. Hardness at elevated temperatures is one of the characteristics exhibited by "Paraffint." Moore & Munger's modified Abraham consistometer, measures the product's hardness at 75 at room temperature, against 92 for carnauba, 72 for tank bottom wax, and 43 for refined paraffin

(m.p. 150). At 130°F, "Paraffint" exhibits hardness of 49, compared with 62 for carnauba, 40 for tank bottom wax, and 28 for paraffin.

"Paraffint's" good hardness characteristics and the ability to take a high shine and buff makes it suitable for incorporation in polish formulations. In addition it is said to lend itself to oxidation in the production of emulsifiable waxes.

Typical physical data on "Paraffint" are as follows:

Melting Point .....	215°
Needle Penetration at 77°F. ....	1.0
Oil Content .....	less than 1.0%
Average Molecular Weight .....	750 (approximate)
Acid, Saponification, Bromine Numbers ...	Nil
Ash Content .....	less than .01%
Color .....	White
Viscosity at 250°F. ....	9.5 centipoises
Specific Gravity at 77°F. ....	0.93/.95
Essentially odorless	

## Carbide Assigns Four

Four technical representatives have been assigned to sales offices of Carbide and Carbon Chemical Co., New York, after completing a six-week training course at the Mellon Institute of Industrial Research, Pittsburgh, it was announced recently. The assignments follow: N. R. Carbone, Los Angeles district office; J. R. Conaway, general sales office, New York; J. A. Francis, St. Louis district office; and A. F. Murray, Pittsburgh district office.

# Precision

## QUATERNARY AMMONIUM COMPOUNDS

### To Fit Your Most Exacting Needs

#### \* GERM-I-TOL

Higher Alkyl (C<sub>12</sub>-C<sub>18</sub>) Dimethyl Benzyl Ammonium Chloride Official in the U.S.P. under the name of Benzalkonium Chloride

#### \*\* CETOL

Cetyl Dimethyl Benzyl Ammonium Chloride

#### \*\* BROMAT

Cetyl Trimethyl Ammonium Bromide (Also known as CETAB; under world health organization nomenclature CETRIMIDE, Cetrammonium Bromide)

#### \*\* BRETOL

Cetyl Dimethyl Ethyl Ammonium Bromide (Also known as ETHYL CETAB)

#### \* DICHLORAN

Higher Alkyl Dimethyl Dichlorobenzyl Ammonium Chloride

#### \* D M B C

Higher Alkyl Dimethyl Benzyl Dimethyl Ammonium Chloride

#### \*\*\* SD-75

Higher Alkenyl Dimethyl Ethyl Ammonium Bromide

#### \*\*\*\* STEARYL COMPOUND

A compounded product of Stearyl Dimethyl Benzyl Ammonium Chloride and Stearyl Alcohol

#### \* NEO-GERM-I-TOL

Higher Alkyl Dimethyl Benzyl Ammonium Chloride

• • • Supplied in 50% concentration to manufacturers; for sanitizing pharmaceutical equipment—for drinking water of poultry—as an algicide in swimming pools. Formulations will be supplied to make compounds for dairy sanitation under U.S.P.H.S. Milk Ordinance, suitable for sanitation in hard water and for destroying resistant strain of *Pseudomonas Aeruginosa*.

• • • Supplied in 100% crystalline powder for pharmaceutical use in lozenges and solubilizing thyrotricin.

• • • Supplied as 100% active material as against British Pharmacopeia Cetrimide requiring only 82% active; as industrial, cosmetic, and toilet deodorant.

• • • Used in formulations for dental sanitization—in soldering flux formulations where corrosive acid fluxes are not desirable, extensively used in electronics.

• • • Supplied in 60% concentration for veterinary trade—sanitization of drinking water of poultry and general sanitization in animal husbandry.

• • • Supplied in 50% concentration as a specialty quaternary ammonium compound of high bactericidal potency, suitable for slime control in paper mills. It tolerates moderate water hardness.

• • • Supplied in 75% concentration for use as an algicide in swimming pools and for slime control in air conditioning and cooling towers. Also supplied in 10% solution under private label.

• • • For cosmetic rinses and other cosmetic applications.

• • • Highly effective in hard water with high bactericidal potency. Supplied in 50% concentration.

*We also manufacture quaternary ammonium hydroxides and other organic chemicals for all industries.*

Technical Data Sheets Available on Request

\* Liquid

\*\* 100% active powder or crystals

\*\*\* Paste

\*\*\*\* Emulsion

"Precision is our watchword"

## FINE ORGANICS, INC.

211 East 19th Street, New York 3, N. Y.

GRamercy 5-1030

Plant: 205-225 Main Street, Lodi, New Jersey

### **Argueso Elects Secretary**

Peter G. Argueso has recently been elected secretary of M. Argueso & Co., Mamaroneck, N. J., wax importers and refiners. Mr. Argueso's father, Luis Argueso, Sr., is president and Luis, Jr., another son of the president is treasurer.

### **Switches to Specialties**

(From Page 214)

ucts, of the 121 items he manufactures, are "Lustro-Finish," a transparent anti-skid floor coating, "Skip" floor cleaner, and "Grip-Gloss," a terrazzo cleaner. Besides these, Fernandez handles 300 items of janitorial supplies.

### **Adds Automotive Items**

**I**N September 1955, Mr. Fernandez added the Dixie Automotive Products to his organization. This division of his company makes such items as brake fluid, steam coil cleaner, tire dressing, leather cleaner, and hand soaps. The complete line has 23 different items related to the automobile maintenance field. All of these products are manufactured in Tampa but warehoused in Atlanta.

In the sales department, Mr. Fernandez has 18 full-time salesmen who cover Florida and the southeast. One of his salesmen, Jimmy Valenti, travels the Eastern seaboard and as far west as Chicago calling on terrazzo contractors. Nine of the Florida salesmen have walk-in sales trucks and are located in Gainesville, Miami, Clearwater, Ft. Lauderdale, Ft. Pierce, Orlando, Sarasota, and St. Petersburg. These men only come to Tampa for conferences, as all their supplies are trucked to them by Mr. Fernandez' own trucks.

Beside the nine walk-in sales trucks, Fernandez has two panel trucks, two pick-ups, three vans, and one semi-trailer truck that makes regular runs to New York. This semi-trailer takes finished products to New York and Atlanta and on the return run brings raw materials to Tampa. With his railroad siding and fleet of trucks,

Fernandez does a very small percentage of hauling business with commercial trucking firms.

In 1955 the testing laboratory was enlarged and a full-time chemist was employed. A new product, which will be marketed soon, is a protective plastic coating for marine and heavy industrial use. This coating, according to Mr. Fernandez, is resistant to acids, salt, and alkalies.

Questioned on his future plans, Mr. Fernandez said he has just entered the Cuban market and has been making inquiries into the possibilities of marketing his products in Central and South America.

### **Aerosols Abroad**

(From Page 209)

the older products, the push button shave lather will be successful only as a gift and luxury item. This being so, the item must be packed in very good taste and scented with excellent perfume. Advertising should stress the luxury appeal of the product. Marketing advice for aerosol shave can be summarized thus: to reach the mass market a drastic price reduction is indispensable; failing this prerequisite, presentation, perfume, and advertising must be slanted definitely for the luxury market.

### **Perfume Extracts**

**T**HE price factor is of lesser importance in the packaging of these items which belong per se in the luxury class. An aerosol package could offer the following benefits in this field: risk of loss by upsetting bottle is eliminated; evaporation through an ill fitting or absent stopper is not possible; deterioration through oxygen from the atmosphere does not take place. In addition, a fine perfume in aerosol form could be used to scent the atmosphere in the home, hotel, or exclusive night spot. Actually such perfuming of space occurs every time the lady uses such a package at her dressing table and there is no doubt of its favorable effect.

Although we do not foresee a complete disappearance of the perfume bottle in favor of the aerosol container, pressure packaged extracts should enjoy a good market if the pressure container succeeds in maintaining the tradition of luxurious and original presentation associated with this industry. Advertising in this instance faces a peculiar problem: the actual practical advantages of the aerosol cannot be emphasized in the copy because they do not fit into the carefully fostered note of luxury which must be preserved in publicity for fine perfumes.

### **Personal Deodorants**

**N**O fundamental advantages are offered by the aerosol personal deodorant compared with good cream or stick products. Furthermore, the liquid deodorant in a squeeze bottle produces a similar effect at lower price. It is therefore very doubtful whether the pressure package has any future in this field.

### **Sun Tan Lotion**

**S**PRAYING of the body with a sun lotion is a far more elegant mode of application than manual rubbing. If the use of the aerosol could completely eliminate greasy hands, it would offer a very great advantage. Unfortunately such is not the case: the face cannot be sprayed directly because of risk to the eyes. However, the aerosol packaged sun tan lotion does have certain advantages: no spilling from an upset bottle, for instance; outside of the container does not get so messy; no half-empty sticky bottle to pack with clothes and towels, because the aerosol container need never be touched with greasy hands, provided the face is treated last. All these benefits should appear in the advertising.

In this group, extra cost is not so important. Sun tan preparations are intended for leisure and vacation, not for daily use. For such purposes the public is usually prepared to spend a little extra money.

# Central Can's

—well earned  
reputation  
for outstanding  
service is pro-  
tected by  
operational  
flexibility



VISIT US AT THE  
C. S. M. A.

Meeting  
in Washington, D. C.

## INTERIOR PROTECTIVE COATINGS

Consult us regarding your  
packaging problem.  
Our many years of scientific  
experience in application of  
protective interior coatings  
for all types of products  
is at your disposal.

**CENTRAL CAN COMPANY**  
2415 W. 19th St., Chicago 8, Illinois



# News

## Stauffer Names Ellis

Stauffer Chemical Co., New York, recently announced the appointment of George C. Ellis as a



George C. Ellis

senior vice-president and general manager of the West End Chemical Division. He also has been elected to the board of directors. Mr. Ellis, one of the founders of West End, has been an officer and director of that company for the past 26 years. He has served as president since 1943.

At the same time, Stauffer announced that H. D. Hellmers and D. G. Ellis have been named vice-presidents in charge of production and sales, respectively, for the West End Division. Both men previously had served West End in a similar capacity, prior to its recent merger into Stauffer.

## Plant Maintenance Show

"Good Maintenance or Bad—the Difference is Profit" will be the theme of the eighth National Plant Maintenance & Engineering Conference to be held at the Public Auditorium, Cleveland, Jan. 28-30. The conference will be held in conjunction with the Plant Maintenance & Engineering Exposition to be held at the Auditorium, Jan. 28-31.

Ten conference sessions will be held simultaneously and will be

repeated to permit visitors to choose the date of attendance or attend different meetings. Topics to be covered at these sessions include "Sanitation with Particular Reference to Floors, Windows and Washrooms;" and "Maintenance in Chemical Plants."

More than 400 companies plan to exhibit at the show and the exhibit area is expected to exceed 100,000 square feet. The exposition now is among the three largest annual industrial shows in the nation.

## Real Kill Names Kirk

Roger M. Kirk, Jr., has been appointed vice-president of sales and advertising of Real Kill Co., Kansas City, Mo., manufacturer of household insecticides, it was announced recently by Ralph G. Martin, Sr., president. Mr. Kirk was formerly merchandising manager of Dromedary Co., New York. In his new post, Mr. Kirk will be in charge of all sales and advertising of the firm's line of household insecticides.

## Winters Joins Carbide

Robert W. Winters has joined Crag Agricultural Chemicals Sales Department of Carbide and Carbon Chemical Co., New York, as technical representative, it was announced recently by R. H. Wellman, department manager. In his new post, Mr. Winters will represent Crag's line of chemicals in Minnesota, Michigan, Indiana, Wisconsin and Iowa. Prior to joining Carbide, Mr. Winters was a high school teacher in Michigan.

## West Sales Meeting

West Disinfecting Co., Long Island City, N. Y., recently held a one-day sales meeting at the Hotel George Washington, Jacksonville, Fla., for its salesman covering Georgia and Florida. Attending the meeting were Chet Powell, manager of the Birmingham, Ala., district office of which Florida is a

part, and William Pierson, assistant district manager in Jacksonville.

## PICCO Names Braun

Pennsylvania Industrial Chemical Corp., Clairton, Pa., recently announced the appointment



Dean F. Braun

of Dean F. Braun as sales manager of the firm's newly-established Minneapolis sales office. In his new post, Mr. Braun will be in charge of sales of the firm's line of synthetic resins and solvents in Minnesota and surrounding communities. He was formerly associated with the company's Chicago sales division.

## McCormick Names Two

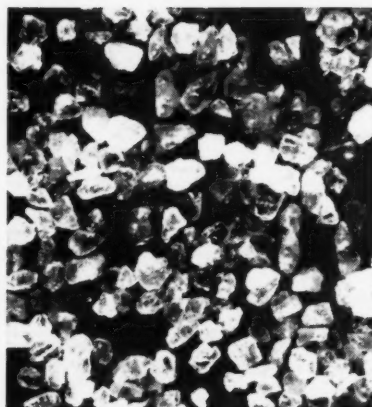
Two executive changes were announced recently by McCormick & Co., Baltimore. James F. Walsh has been appointed vice-president while Joseph A. Braun has been elected to the board of directors.

## In New Lehn & Fink Post

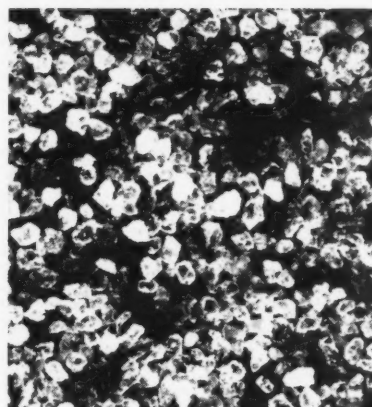
A. Bruce Campbell has been appointed eastern sales manager of the Lehn & Fink Division of Lehn & Fink Products Corp., New York, it was announced recently by O. G. Kennedy, division general manager. In his new post, Mr. Campbell will supervise the marketing of "Lysol" disinfectant and "Eti-quet" deodorants. He joined Lehn & Fink in 1939 as a sales representative and previously had been associated with Andrew Jergens Co.



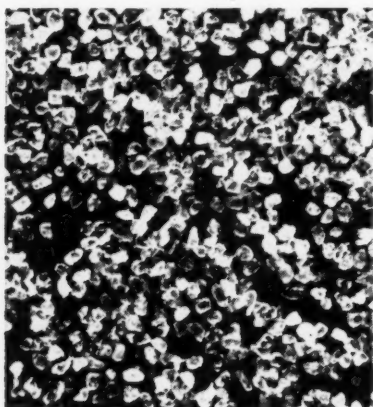
**1. REPACKAGE** these sparkling *Pea No. 1* crystals just as they come from the drum. Clean, dry, non-oily, they give maximum sales appeal to your product.



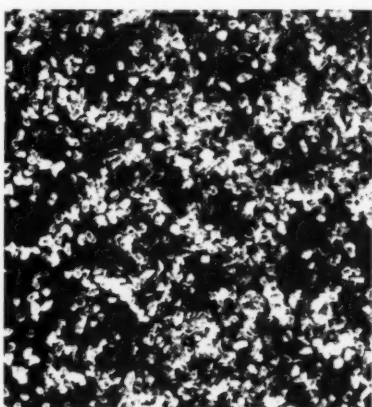
**2. ADD VARIETY** to your mothicide line with smaller, free-flowing *Pea No. 2* crystals. Repackage them as they are, or perfume them without melting.



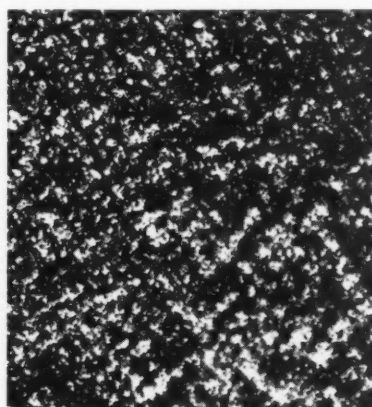
**3. A POPULAR SIZE** for sprinkling on clothes, *Rice No. 1* sublimates quickly to an extra-high concentration of pleasant-smelling, moth-killing fumes.



**4. FEED POWER PRESSES** with *Rice No. 2*. These crystals are just right for compressing into blocks or pellets. They flow freely; refill dies rapidly.



**5. IN FOOT PRESSES,** *Rice No. 3* works best. The crystals are free-flowing, small enough to pack and compress with little effort, for fast production.



**6. MELT THIS SUPERFINE** Powdered size for molding into blocks or pellets. It melts rapidly, saves production time. Easily colored or perfumed.

## 6 ways to market a purer *para*-dichlorobenzene product

Get more repeat orders for your *para*-dichlorobenzene products—by offering your market a line made with sparkling 100% pure PARADI®.

Your retail customers will like these sparkling white, dry, non-oily crystals. They sublime completely, leaving no residue or odor, because they're 100%

Hooker *para*-dichlorobenzene, with no *ortho*-.

Whether you repackage *para*-dichlorobenzene, compress it into blocks, or use it directly in process, you'll find extra convenience and real production economy in the wide choice PARADI gives you.

You can have PARADI shipped promptly in fiber drums containing 25, 50, 100, or 250 pounds. If you'd like to see one-pound samples, just ask us on your company letterhead, specifying the sizes you want.

*All photos actual size*

### HOOKER ELECTROCHEMICAL COMPANY

112 Union Street, Niagara Falls, N. Y.

NIAGARA FALLS • TACOMA • MONTAGUE, MICH. • NEW YORK • CHICAGO • LOS ANGELES



683W15

### Virginia Sales Increase

Virginia-Carolina Chemical Corp., Richmond, Va., recently reported that net sales for the first quarter of its fiscal year ended Sept. 30, have increased to \$10,123,085 from \$9,667,009, in the corresponding period last year. Net income amounted to \$117,513 as compared with \$104,739, in the first fiscal quarter a year ago.

### Mich. Chemical Sales Up

Sales and earnings of Michigan Chemical Co., St. Louis, Mich., showed a slight increase for the nine-month period ended Sept. 30, it was announced late last month. Net sales for the first nine months totaled \$5,271,648, as compared with \$5,257,722, in the corresponding period of 1955. Net income for the nine months ended with September increased to \$400,965, equal to share earnings of 75 cents, from \$374,670 and 70 cents, in a similar period a year ago.

### Carbide Record Earnings

Sales and earnings of Union Carbide and Carbon Corp., New York, for the first nine months of 1956, were the highest of any similar period in its history, it was announced recently by Morse G. Dial, president.

Net income for the first nine months amounted to \$102,247,624, equal to share earnings of \$3.50, compared with \$101,436,489 and \$3.48, in the corresponding period of 1955. Net sales for the nine months ended with September increased 9.3 percent to \$937,129,856 from \$857,123,236 in the first nine months of last year.

### Monsanto Sales Higher

Monsanto Chemical Co., St. Louis, recently reported an increase in sales and a decline in net income and earnings for the nine and three-month periods ended Sept. 30. Net sales for the first nine months of 1956 totaled \$407,380,944, as compared with \$390,835,150, in the corresponding period of 1955. Net income for the nine months ended with September amounted to \$28,-

812,643, equal to share earnings of \$1.37, as compared with \$32,768,562 and \$1.54, in the first nine months of 1955.

In the third-quarter of 1956, Monsanto reported total sales of \$127,124,171 as compared with \$124,631,443 in the third-quarter of 1955. Net income dropped to \$6,838,057, or 32 cents per share, from \$8,225,143, or 38 cents per share, in the similar 1955 period.

### Atlas Earnings Increase

Net sales and earnings of Atlas Powder Co., Wilmington, Del., showed a sharp increase for the first nine months of 1956, it was announced recently by Ralph K. Gottshall, president.

Net sales for the first nine months of 1956 totaled \$49,999,496, an increase of eight percent from the \$46,397,974, in the corresponding period of 1955. Net income for the nine months ended with September increased 26 percent to \$3,291,608, equal to share earnings of \$1.40, from \$2,616,193 and \$3.43, in the first nine months of last year.

In the third quarter of 1956, Atlas reported an increase in net income to \$1,059,291, equal to share earnings of \$1.41, as compared with \$928,010 and \$1.20, for the similar three months last year.

"Suede-Aid" suede cleaner and reviver, announced recently by Suede-Aid Co., Orangeburg, N. Y., comes packed in four ounce plastic squeeze bottle. Product retails for \$1.00. It is applied by spraying, then brushed and suede allowed to dry.



### Dow Sales Up

Dow Chemical Co., Midland, Mich., recently reported an increase in net sales and a decline in net income and earnings for the first quarter of its fiscal year ended August 31. Net sales were up to \$150,784,025 in the first fiscal quarter from \$128,166,671 in the corresponding period last year. Net income for the first fiscal quarter of '56 totaled \$11,275,315, equal to share earnings of 47 cents as compared with \$11,723,647 and 51 cents a year ago.

U. S. and foreign income taxes amounted to \$8,889,789 in the first '56 fiscal quarter, as compared with \$9,770,209 in the same months of 1955, while depreciation and amortization totaled \$20,186,766, against \$18,743,000 in the previous year.

### Stauffer Sales Rise

Net sales and income of Stauffer Chemical Co., New York, showed a slight increase in the first nine months of 1956, it was announced recently by Hans Stauffer, president. Sales for the nine month period totaled \$119,420,000, an increase of nine percent over the total of \$109,144,000, reported in a similar period a year ago. Net income for the first nine months amounted to \$9,652,000, equal to share earnings of \$3.14, as compared with \$9,468,000 and \$3.11, in the corresponding period of 1955.

In the third quarter of 1956, Stauffer reported total sales of \$41,679,000, as compared with \$39,357,000, in the third quarter of 1955. Net income, however, declined to \$3,027,000, equal to 98 cents per common share, from \$3,379,000 and \$1.11, for the similar three months last year.

### Resistant Floor Seal

A new seal and finish for wood, cement, terrazzo, and other floors was introduced recently by Robert Langer Co., 507 Fifth Avenue, New York 17. The product exhibits high resistance to acids, alkalies, oil, water, and abrasion.



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Meelium is a true deodorant—not just a masking agent or olefactory desensitizer. This quick-acting chemical neutralizes odor-producing elements... destroys both organic and inorganic odors usually associated with animals, human beings, food, etc.

A room sprayed with Meelium solution for three to five seconds is effectively deodorized. Since it is odorless, it is suggested that a small percentage of perfume oil be added to enhance consumer appeal. Meelium is approximately equal to Pyrethrins in tox-

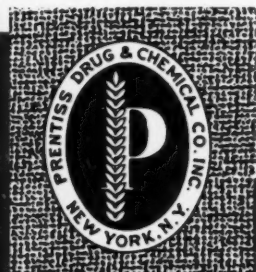
icity, and in suggested concentrations is chemically stable and non-corrosive.

Meelium is supplied to the aerosol industry as a 60% active deodorant. Available immediately in 5-gallon drums (35 lb. net), 30-gallon drums (225 lb. net) and 55-gallon drums (410 lb. net).

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It is said to be fast drying, easy to apply, of very pale color and good gloss properties. A technical bulletin on "ERE-530" floor coating is available from Langer. The leaflet gives very detailed data on the product's chemical resistance characteristics, suggests its use in food processing and handling establishments and in institutions.

#### Battelle Shellac Research

A study to uncover additional uses for shellac has begun at Battelle Memorial Institute, Columbus, O., under the sponsorship of the American Bleached Shellac Manufacturers Association, New York, it was announced recently.

In this research, Battelle technologists will seek new direct applications for shellac in its present form and will experiment with chemical modifications for the development of diversified applications.

#### Cole Incorporates

Charter of incorporation has been granted H. A. Cole Products Co., Jackson, Miss., to manufacture disinfectants and insecticides, and distribute same. Capital stock of \$60,000 was listed.

#### New Carboline Coatings

Five new epoxytar protective coatings, designed for use in the maintenance of equipment exteriors, tank linings and floors, are discussed in a new bulletin recently made available by Carboline Co., St. Louis.

Called the "Carbomastic" series, the coatings are said to resist water, excessive humidity, brine, refinery products, ultra violet light, hydrogen-sulfide gases, ammonia, salts and alkalies. They have solids content ranging from 85 to 90 percent and can be applied at thicknesses up to 10 mils per coat.

Further information regarding chemical and physical properties, recommended uses and typical systems, can be found in technical bulletin No. 803, which is available from the company at 331 Thornton Ave., St. Louis 19.

#### Montrose in Mexico

Montrose Chemical Co., Newark, N. J., recently announced the organization of Montrose Mexicana, S.A., as the first step in the firm's planned expansion into Mexico. A mercury cell chlorine-caustic soda plant and a monochlorobenzene, chloral and DDT plant will be constructed at a site near Irapuato, Mex. Montrose Chemical Corp., Los Angeles, jointly owned by Stauffer Chemical Co., New York, and Montrose Chemical Co. will supply the know-how and management and will receive a substantial stock interest in the new organization.

#### ADACIOM Hears Lloyd

Evan S. Lloyd, assistant director of Internal Revenue, was the principal speaker at the November meeting of the Associated Drug & Chemical Industries of Missouri held at the Hotel Chase, St. Louis. Mr. Lloyd's topic was "Enforcement of Internal Revenue Laws."

#### Mathieson Names Three

Three appointments to the industrial chemical division of Olin Mathieson Chemical Corp., New York, were announced recently. The three men, James G. Chalfant, who has been named market development manager; Bernard N. Schrauf, who has been appointed market research manager; and Norman C. Schultze, who has been named technical service manager, will be located in the division's headquarters offices in Baltimore.

Mr. Chalfant was formerly in charge of market development in the company's general research organization in New Haven while

Mr. Schrauf previously was employed in the firm's market research division on new products. Mr. Schultze formerly was supervisor of organic sales services in the Baltimore division.

#### New Hygienic Guide Sheets

Control standards for human exposure to hydrogen fluoride, trichloroethane, trichloroethylene, ethyl alcohol and mercury are discussed in a new series of hygienic guide sheets, recently published by the American Industrial Hygiene Association, Detroit. The guide sheets also list additional information about each substance including hygienic standards, significant properties, recommended uses and first aid treatments. Copies of individual sheets can be obtained for 25 cents each from the association, 14125 Provost, Detroit 27.

#### SAACI Nominations

Warren F. Schumacher of J. T. Baker Chemical Co., Phillipsburg, N. J., has been elected chairman of the nominating committee of the Salesmen's Association of the American Chemical Industry, it was announced late last month. The seven-man group will choose a slate of SAACI officers for 1957-58. Other members of the nominating unit are: Edward A. Bush, Dragoco, Inc., New York; George L. Conboy, Merck & Co., Rahway, N. J.; N. Harold Fyffe, Oldbury Electro-Chemical Co., New York; Walter T. Johnson, Columbia-Southern Chemical Corp., New York; James McInnes, Jr., Commercial Solvents Corp., New York, and M. Testa, Jr., Shell Chemical Corp., New York.

#### Chemically Active Silanes

A new group of silanes which can be reacted with organic chemicals were introduced late last month by the Silicones Division of Union Carbide and Carbon Corp., New York. These "Organo-Functional" silanes are suggested for use in emulsifiers, anti-static agents, lubricants, flame-retarding materials, and other consumer products.



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UNIFORMITY**



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FATTY ACIDS &  
METHYL ESTERS**

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Lauric	Coconut	Myristic
	Palmitic	

METHYL ESTERS		
Caprylate	Eldo 18*	Caprate
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VAC-DRY is made from lighter-colored raw shellac. It has low acid value. Takes less alkali to go into solution for greater water resistance. Dissolves readily. Makes an unusually stable aqueous solution.

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Union Carbide is currently offering on a pilot plant scale: gamma-aminopropyltriethoxysilane, delta-aminobutylmethyldiethoxysilane, beta-carbethoxyethyltriethoxysilane, and beta-carbethoxyethylmethyldiethoxysilane. Some of these compounds may be useful in imparting greater durability to pesticides owing to their water resistance. Perfume making and dentifrice manufacture are other fields where the "Organo-Functional" silanes show promise.

A 16-page booklet is available from the Silicones Division at 30 East 42nd Street, New York 17.

#### Warwick Advances Petrie

George A. Petrie has been named assistant sales manager of Warwick Wax Co., a subsidiary of Sun Chemical Corp., Long Island City, N. Y., it was announced recently. In his new post, Mr. Petrie will supervise sales of Warwick's specialty waxes. He will headquarter at the Sun Chemical Building in Long Island City.

Mr. Petrie joined Sun Chemical in 1942 as a laboratory assistant in the General Printing Ink Division. After World War II he joined the development laboratory of another Sun subsidiary, A. C. Horn, Inc. He transferred to Warwick in 1948 as a chemist and has since served as assistant to the director of research and assistant to the vice-president of distributor sales. In January, 1953, he was appointed field service manager.

George A. Petrie



#### Rutgers Honors Nelson

Dr. Franklin C. Nelson, senior technologist of Esso Standard Oil Co., New York, was presented



Franklin C. Nelson

with a framed letter from Dr. Lewis Webster Jones, president of Rutgers University, expressing the gratitude of the University for his ten years of service as chairman of the advisory council of the Thomas J. Headlee Fellowship in Entomology. The presentation was made by Dr. William H. Martin director of the Agricultural College and Experiment Station, at the council's annual meeting held last month at the University.

The fellowship supports two graduate students, who conduct research on the action of insecticides within the bodies of insects. Present officers of the council include Dr. H. L. Haynes, Union Carbide and Carbon Corp., New York, chairman; and Dr. C. C. Alexander, Geigy Chemical Corp., Ardsley, N. Y., vice-chairman.

#### IPCA Elects Chamlin

George R. Chamlin, president of Continental Chemiste Corp., Chicago, has been elected president of the Illinois Pest Control Association, Chicago, it was announced recently. Other officers elected were Charles O'Hara, Anderson Exterminating Co., Chicago, vice-president; Frank Jeremia, Lien Chemical Co., Chicago, secretary; and Richard G. Prescott, Protex Service, Inc., Chicago, treasurer. Elected to the board of directors were John Mock, Ar-

well, Inc., Chicago; Svend A. Nielson, Rose Exterminator Co., Chicago; and N. S. Wheeler, Wheeler Exterminating Systems, Chicago.

#### New Prentiss Deodorant

Prentiss Drug & Chemical Co., New York, has acquired exclusive sales rights to "Meelium" deodorant, it was announced recently by John Stoddard, vice-president. Prentiss will offer Meelium to the aerosol filling trade in the form of a concentrate, diluted with deodorized kerosene. According to Mr. Stoddard, "Meelium" was one of the first deodorants offered to aerosol fillers five years ago, and one of the few products that has been studied toxicologically.

#### Richard Law Killed

Richard Law, advertising manager for Federal Varnish Division, Chicago, was killed in an automobile crash Nov. 8. The accident occurred on Mannheim Road near Chicago.

#### Whitewall Tire Shampoo

Curran Corp., Lawrence, Mass., recently announced the addition of a new whitewall tire shampoo to its line of "Gunk" solvents. The new product is claimed to be harmless to rubber and non-evaporating. It is applied by pouring a small amount on a damp sponge, wiping on, and then hosing off. The shampoo is now available in pint cans at most automotive supply wholesalers.



### Diamond Appoints Snyder

The appointment of Darl E. Snyder as eastern district manager of Diamond Black Leaf Co., Cleveland, was announced last month by George V. du Pont, general manager. In his new post, Mr. Snyder will supervise the merchandising of Black Leaf's line of chemicals in a 14 state area from Maine to North Carolina. He will headquarter at the company's eastern sales office at Lancaster, Pa. Prior to

joining Black Leaf, Mr. Snyder was associated with Standard Oil Co., (Ind.), Chicago, where he supervised technical sales and service work on agricultural and household chemicals.

—★—

### FMC Shifts Three

Three managerial changes were announced recently by Food Machinery and Chemical Corp., New York. William R. Huguenin has been elected president of



Arthur J. Olsen

FMC's newly-acquired Hudson-Sharp Machine Co., Green Bay, Wisc., while Arthur J. Olsen has been named resident manager.



William R. Huguenin

George Jones has been appointed manager of FMC's Simplex Packaging Machinery Division, Oakland, Calif.

Mr. Huguenin, who succeeds

George Jones



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Samuel J. Campbell who has retired, is presently in charge of FMC's Stokes & Smith Co., Philadelphia, and also supervises packaging operations at Simplex, and Kingsbury and Davis Machinery Division, Contoocook, N. H. Mr. Olsen was formerly manager of the Simplex Division while Mr. Jones previously had been assistant manager of the company's Bolens Products Division, Port Washington, Wisc.

—★—

### New Huge Insecticide

A new residual insecticide, designed to eradicate immune or resistant roaches, dermestid pests and other common stored product pests, has been developed by Huge, Inc., St. Louis, it was announced recently. Tradenamed "Excelcide," the new product contains strobane, malathion, pyrethins and synergists and is said to be quick-acting. Further information can be obtained from the company, 884-6 Hodiamont Ave., St. Louis 12.

—★—

### New Alpha Rep.

Alpha Engineering and Machine Works, Inc., Mount Prospect, Ill., recently announced the appointment of Brantford Oven & Rack Co., Ltd., Brantford, Canada, as sole Canadian sales representative and distributor of its line of aerosol pressure filling equipment. Bob Shelley and Tom Curry, Brantford representatives, will handle the introduction of Alpha's aerosol equipment into Canada.

Robert S. Shelley



### New Bobrick Catalog

A new catalog, listing and describing its line of dispensers, has been issued by Bobrick Dispensers, Inc., Brooklyn, N. Y., it was announced last month by James E. Pollak, sales manager. In addition, the four-page catalog gives complete information on the firm's tank-type soap systems and liquid and lather soap valves. Copies are available on request to the com-

pany, 1214 Nostrand Ave., Brooklyn 25, N. Y.

—★—

### William B. Wingert Dies

William B. Wingert, 55, vice-president of the Semet-Solvay Division of Allied Chemical & Dye Corp., New York, died Nov. 15 in White Plains Hospital, White Plains, N. Y., after a short illness. Surviving are his widow, Mrs. Emily Lucy Culbertson Wingert;

## Sales Builder . . . AT YOUR FINGER TIPS!

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### SOLVENTS

Both available types are *safe* and free from kerosene or other objectionable odor. They are non-staining and do not contain reactive compounds. *Penn-Drake 2251 Oil* has a flash point of 170°/180°F. C.O.C., *Super-Sol* a flash point of 130°/135°F.



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SOAP and CHEMICAL SPECIALTIES

a son, Edmund C.; a daughter, Lucy; his mother, Mrs. Samuel V. Wingert, and a sister, Miss Mary Elizabeth Wingert.

—★—

### More Dieldrin to Indonesia

The second part of a 100,000-pound shipment of dieldrin, an insecticide manufactured by Shell Chemical Co., New York, has been shipped to Indonesia to help in that country's fight against malaria, it was announced recently. The shipment brings the total amount of dieldrin transported to Indonesia since last May to 900,000 pounds. At that time the Indonesian government began a five-year campaign to eradicate the malaria-bearing mosquitoes from its populace which numbers over 30 million.

According to a report from the Indonesian government, the number of new cases of malaria has begun to decline since the initiation of the campaign. Present plans call for spray-teams to cover each dwelling once a year, the period of effective mosquito control provided by dieldrin. By 1958 the government expects to have the entire malaria area covered.

Indonesia started a similar campaign with DDT in 1951. It showed increasing signs of success until 1953, when the number of malaria cases took a sharp turn upwards. Researchers discovered that the mosquitoes had built up a resistance to the insecticide.

—★—

### Merger Meeting Set

Stockholders of Heyden Chemical Corp., New York, and Newport Industries, Inc., New York, will hold separate meetings on Dec. 27 to consider a proposal to merge Newport into Heyden, it was announced recently. Directors of both firms approved the merger last month. Under the plan, 1½ shares of Heyden would be exchanged for one of Newport.

If the proposal is approved, Heyden's name will be changed to Heyden-Newport Chemical Corp. Directors expect the trans-

action to be completed by Jan. 2, 1957. If it is consummated by this date, 31,000 shares of Newport preferred stock will be called for redemption in January.

Heyden is a major producer of chemicals used in protective coatings and plastics. Newport makes refined tall oil and tall oil products. Heyden had earnings in the first nine months of 1956 equal to 78 cents per share, compared with 68 cents in the like 1955 period.

### Bruce Earnings Drop

Sales and earnings of E. L. Bruce Co., Memphis, Tenn., fell sharply in the nine-month period ended Sept. 30, it was announced recently. Net sales for the first nine months of 1956 totaled \$7,839,434, as compared with \$9,200,588, in a similar period a year ago. Net income in the nine months ended with September fell to \$220,739, equal to share earnings of 69 cents, from \$458,076 and \$1.44, in the first nine months of 1955.



## Disinfectants Are Different Now.

Changes are taking place all the time in disinfectant and sanitizer formulating, and performance testing. The eighth edition of the Methods of Analysis of the AOAC includes comparatively new tests for disinfectants, makes changes in others. New ingredients call for new methods of establishing claims.

Your product may require new proofs of effectiveness — and if it measures up to new test requirements, you may have a plus value for promotion.

The Bacteriological Laboratories of Foster D. Snell, Inc., are at your service if you have ingredient problems, new test requirements or new applications in mind in this field. Charges are moderate; service is prompt.

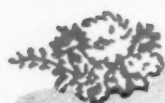
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For application in industry where odor problems are involved.



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99% minimum purity. Clean, uncontaminated odor. Boiling ranges and chemical compositions are appropriate for all applications and required solubilities.

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90% distills within range of 7° C., which better Pharmacopoeia requirements.

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## Detergents CCDA Topic

(From Page 46)

panel's discussion. Other panel members included:

P. T. Vitale, division head, research and development department, Colgate-Palmolive Co., New York; J. A. Quinn, sales manager, Theobald Industries, Kearny, N. J.; Dr. D. H. Terry, vice-president and director of research, Bon Ami Co., New York; L. D. Berger, Jr., product manager, fine chemicals division, Carbide & Carbon Chemicals Co., New York.

Mr. Pacifico said his panel attempted to clarify the differences between various size companies in the soap and detergent industry. The large companies can use many more products and take a longer time to show a profit in developing new products. The advantage of the small companies is that they can get going faster and do not necessarily remain small. The panel also concluded that the cost of selling household products is large. The panel drew a distinction between those companies that pioneer in new products and those that follow. Many more companies are doing pioneer work, it was the consensus of the panel.

Another question discussed had to do with the type of information that the supplier should make available to the marketer of household products. The panel felt that suppliers now have good data sheets. The most effective arrangement in the panel's opinion are two data sheets. The first designed to arouse interest in the new product, the second giving more specific information on the product. Types of data that should be included were listed as toxicity, possible variations of the product, information on the patent situation and, later, data on the handling characteristics of the product. Application data is desirable, but it should be complete and accurate.

The supplier, in turn, should have more information on the future intentions of the marketing company. This information is essential where the supplier has to make large expenditures for new plants and equipment.

In presenting a new raw ma-

terial, it was felt best to discuss it first with the purchasing agent of the marketing firm.

The chemical companies are not keeping the soap and detergent companies fully informed as to new raw materials, new modifications of standard products, etc., the panel felt. Suppliers should let the user know well in advance if they change a process for making a product they are supplying.

The panel also thought there must be some way to integrate better the market information of the household product marketer with that of the suppliers. Find some way to exchange enough information for each group to do its best job was the advice of the panel.

"Application Research by the Supplying Industries in the Field of Soaps and Detergents" was the subject of panel 3. Panel members were:

Dr. A. B. Steele, manager, technical service department, Carbide & Carbon Chemicals Co., New York, chairman; P. Trix, manager, market development, Wyandotte Chemicals Corp., Wyandotte, Mich.; J. D. Hetchler, chemical director, chemical products division, Archer-Daniels-Midland Co., Minneapolis; J. L. Perlman, technical director, B. T. Babbitt, Inc., New York.

This panel discussed the fundamental problem of how far basic chemical producers should go in doing research in product development. This is the responsibility of both the supplier and consumer

of the raw material and there are areas in which the obligation is mainly on the supplying industry. The supplying industry should have a full understanding of the marketing and economic problems of the consuming industry. Each group could benefit by both doing its own research. Problems pertaining to the toxicity of the finished product and its formulation should be handled by the seller and formulator of the finished household product. There is little difficulty in selling a million dollar idea to industries making consumer products, in the opinion of the panel.

"Establishing New Consumer Products in the Soap and Detergent Industry" was discussed by panel 4. Chairman was R. E. Horsey, vice-president in charge of sales for Givaudan-Delawanna, Inc., New York. Other panel members were:

E. W. Colt, technical director, soap division, Armour & Co., Chicago; W. T. Egan, director of packaging, Colgate-Palmolive Co., New York; J. Stevens, J. Stevens Stock Research Co., Princeton, N. J., and W. R. Forrest, senior vice-president, Foote, Cone & Belding Co., New York.

"The establishment of new consumer products in the soap and detergent industry starts in the research laboratory", E. W. Colt pointed out. "However, the determination of *what specific* new product should be developed is a question that cannot be decided by the research department alone. The

Members of Panel 4: W. R. Forrest, Foote, Cone & Belding Co.; William T. Egan, Colgate-Palmolive Co.; R. E. Horsey, Givaudan-Delawanna, Inc., chairman; E. W. Colt, Armour & Co.; J. Stevens, J. Stevens Stock Research Co.



question concerns the sales and advertising departments, as well as management and research."

"... The responsibility of technical research in developing and establishing a new detergent product is first to determine what product will meet the needs and circumstance of the organization. Second (it must) develop the product, and third (it must be evaluated) under all conditions of use against the principle of competitive products. Fourth, (it is necessary to) check the evaluation through consumer panel testing, and finally to establish its safety under normal conditions of use. . . These are the main essentials needed before sales and advertising can plan the big plunge."

Several of the phases in developing packages for soaps and detergents, as outlined by Mr. Egan, include: 1) product characteristics, 2.) package characteristics, 3.) methods of testing the packages, 4.) design of the package, and 5.) packaging machinery.

"A satisfactory package has several or all of the following functions:

"(1.) It protects the product. It prevents injury, loss, or contamination during all handling from producer to consumer, and often for some time in the hands of the consumer.

"(2.) It protects people from the product. If the product is corrosive, or merely messy, the package must confine it in such a way that it cannot do harm to surrounding things or people, at all stages from producer to consumer.

"(3.) It facilitates the use of the product. The consumer should receive the product in a can, box, bottle or collapsible tube which is easy to open, easy to get the product out of, and convenient to store. This applies as much to the professional and industrial consumer as to the housewife.

"(4.) It helps to sell the product. On the shelves of a supermarket where there is no salesman and no point-of-sale advertising or sales device, the package is on its own.

"(5.) It represents the maker. This may, in some ways, be the same as selling the product, but often a package has a public relations job to do as well as a selling job. It may be seen and handled by many people other than the purchaser and may do much to create a favorable impression of its producer.

"(6.) It instructs the consumer. With various types of detergents and washing

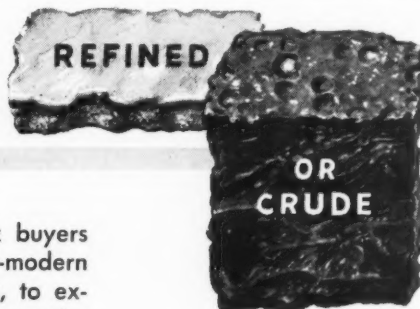
machines on the market, it is very important to have instructions on the package.

"(7.) It should be available for reuse for the same or another purpose."

Mr. Egan concluded by pointing out that it takes a great deal of time to develop a package for a new product and even with all the laboratory testing by suppliers and by the individual specialties marketer, it is still necessary to go through a very conservative method of launching such a product. Such a program would include: laboratory testing, consumer testing, city sales testing, divisional sales testing, and finally nationwide. All during these stages the packaging is studied in the field and in the laboratory to ascertain what is happening in the package.

Although there are various techniques for conducting market research no one method is best, according to Mr. Stevens. Essentially, what the market research man is trying to do is find the most inexpensive way to determine if a product will sell.

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### Barrett Names Shand

The appointment of James E. Shand as assistant manager of chemical sales of Barrett Division of



James E. Shand

Allied Chemical & Dye Corp., New York, was announced recently. Mr. Shand replaces Richard C. Quortrup who died earlier this year. Mr. Shand joined Barrett in 1946 as a member of its technical sales service group, later serving as a special representative. He was named assistant sales manager in 1954 and was appointed as assistant to the manager of chemical sales, last March. Prior to joining Barrett, Mr. Shand was associated with Lever Brothers Co., New York, Howe & French Co., East Weymouth, Mass., and Ellis-Foster Co., Montclair, N. J.

### Gilbert B. Dingley Dies

Gilbert B. Dingley, 59, New York district sales manager of Crown Cork & Seal, Inc., Baltimore, died Oct. 26, in New York after a lengthy illness. Born in Wales, Mr. Dingley joined Crown in 1921 as a sales correspondent. He was later transferred to Brooklyn, N. Y., as a sales representative and was subsequently appointed sales manager for the New York metropolitan area.

### New Congo Pyrethrum Plant

The Belgian Congo's first pyrethrum extraction plant at Chimiphar in Bukavu has started production under the direction of its builder and owner Alois Saelens,

it was announced recently. According to Mr. Saelens, the plant has facilities to process 2,700,000 pounds of pyrethrum blossoms per year.

The United States imports almost all of its pyrethrum requirements from either British East Africa or the Belgian Congo. Since the new unit is located close to the pyrethrum growing area, it will eliminate heretofore costly shipping expenses and thus sharply reduce the total cost of the product.

### Armour Appoints Riegler

Werner L. Riegler has been appointed product manager of the fatty acid sales department of the chemical division of Armour and Co., Chicago, it was announced late last month by J. R. Hoerner, division general manager. Mr. Riegler joined Armour in 1951 in the application research department and was formerly assistant manager of fatty acid sales. He previously had served as a sales consultant for protective coatings.

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### Miss Saunders to Peterson

The appointment of Miss Mary Saunders to the research department of Peterson Filling &



Miss Mary Saunders

Packaging Co., Danville, Ill., aerosol loading and contract packaging firm, was announced late in November by Harry E. Peterson, president. Since 1955 Miss Saunders has been with Liberty Powder Co., subsidiary of Olin Mathieson Chemical Corp., New York. Earlier she had been with E. I. du Pont de Nemours & Co., Wilmington, Del., in the pigments research and film department. She was with du Pont from 1944 to 1954.

Miss Saunders has had considerable experience as an analytical and development chemist and is a graduate of Indiana University, where she received an AB degree in chemistry.



### New Aerogon Waxes

Six new synthetic polymer waxes produced domestically by the oxidation of Fischer-Tropsch high molecular paraffinic hydrocarbons, were announced late last month by Kurt J. Wasserman, general manager of Aerogon Chemical Industries, 240 Broadway, New York 7.

Tradenamed "Aerok," the waxes are produced with acid value ranges to satisfy the requirements of polish manufacturers. Four of the six products are emulsifiable while two are designed for solvent preparations. The waxes are said to be of extreme hardness, light in

color and low in cost. They will be marketed in both the United States and Canada. Further information and samples are available on request.

### P&G Syndet Process

(From Page 99)

coiled pipe—to assure complete conversion to the intermediate, alkylate sulfonic acid. If already complete when it reaches the coil, there will be no further reaction.

Sulfation is a much more difficult proposition. It is a reversible reaction governed by the amount of free water in the system. Side reactions such as oxidation to aldehyde and acid, or dehydration are possible. A delay step cannot be risked and the reaction coil is therefore by-passed and the mixture run to neutralization as soon as possible.

When P&G makes mixed sulfonate (tallow  $C_{16}$  to  $C_{18}$ ) sulfate detergents two units are coupled together, one for sulfonation and one for sulfation. The former's reaction mixture is pumped into the latter's and both are cycled in the "dominant bath." Result of this variation is a decrease of residence time for the sulfation mix.

The mixture leaving the "dominant bath" is cycled to the neutralization system, which again consists of a mixing pump and exchanger loop. Caustic soda, regulated by a pH controller is added. Excess reaction acid converts to sodium sulfate, eliminating a waste disposal problem.

Time lapse from stock injection to neutralization is usually about five to 10 minutes. The product is then a paste. It is pumped to a surge tank and later a mixing tank where additives such as phosphates etc. are added. The product is then spray dried and packaged.

Procter & Gamble has used this continuous process for the manufacture of syndets for over a decade. From *Chemical and Engineering News*, Nov. 5, 1956, p. 5452.

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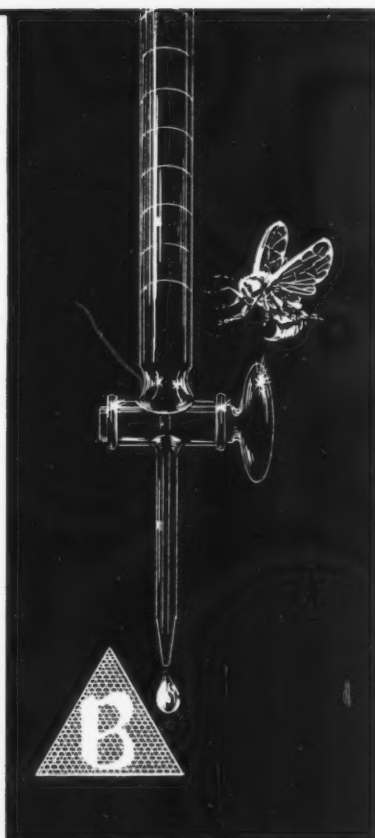
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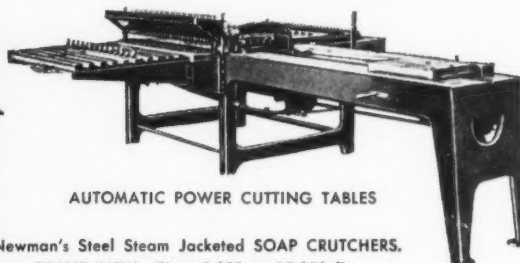
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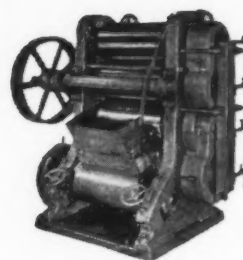


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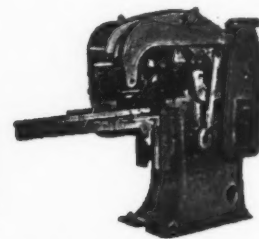


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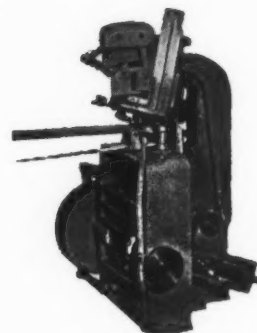
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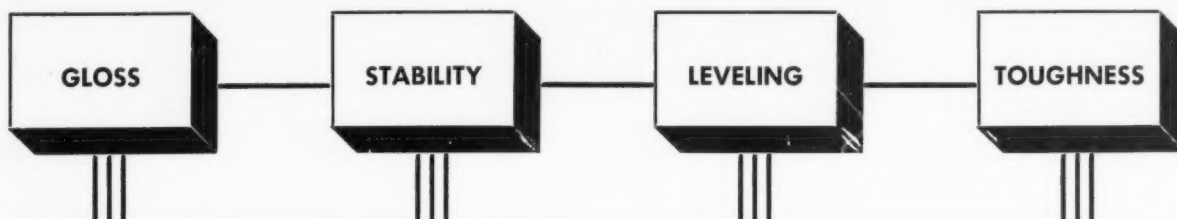
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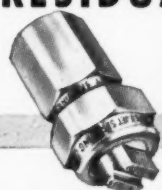
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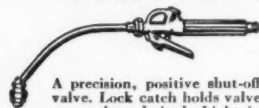
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**Position Open:** Substantial growing company requires man with some chemical education or training to contact oil and chemical industries. Substantial salary and expenses. Position requires extensive traveling and sales personality. Give all details as to employment record, education, previous salary and experience in reply. Address Box 767, c/o Soap.

## Situations Wanted

**Expert Soap Man:** Having long experience in the manufacture of all kinds of laundry and toilet soaps, and cleaning compounds. Glycerine recovery, and soap chemist. Address Box 768, c/o Soap.

**Formulator & Chemist:** Heavy experience aerosols, chemical specialties, cosmetics and household formulations is interested in new connection involving research, development or production aerosol formulations. Must be reliable concern. Address Box 769, c/o Soap.

## Situations Wanted

**Available:** Chemical sales representative. Experienced and highly qualified in technical sales work. Available to basic mfr. interested in the Eastern U. S. area. Have traveled extensively. Will act as consultant or mfr.'s representative. Investigate this opportunity. Address Box 770, c/o Soap.

## Miscellaneous

**Wanted:** Press, including punches and dies for producing 4 oz. round para cakes. Also, equipment for producing 16 oz. and 24 oz. rectangular para blocks. Give complete details. Must be in good working condition. Address Box 771, c/o Soap.

**Attention Merchandising Counselors:** If your powdered soap accounts retail and commercial are slipping then why not lease Zoned Soap Trademark and formulae, any state but Indiana available. Concept is to build the product to fit any hardness of water. Correct promotional approach could not miss. Address Box 772, c/o Soap.

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**For Sale:** By I. E. Newman 818 W. Superior St., Chicago, Ill. Crutchers 1000-8000 lbs.; Wrapper type S; Plodder 10"; auto. Table 2 way; Jones auto. Presses; 100-8000 lb. Powder mixers; Boilers; All kinds soap and chemical equip.

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(Continued on Page 253)

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Hudson Sharp Campbell Automatic Cellophane Wrapper.  
Package Machinery FA, FA2, FA3, FA4, FAQ, Scandia Wrappers.

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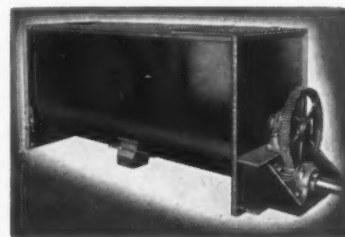
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**Available:** 64 page listing of "Synthetic Detergents Up-to-Date", (1955). Write John W. McCutcheon, 475 Fifth Ave., New York 17, N. Y.

**576 Pages of practical information,** testing & uses of disinfectants, household & industrial insecticides, floor products, soap, specialties, etc. Covers also the subject of labeling and packaging of insecticides, etc. See page 166 for particulars.

**Standard Reference Books:**  
See Page 258

## HOW ABOUT A CANADIAN SUBSIDIARY?

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### More du Pont Methanol

E. I. du Pont de Nemours, Inc., Wilmington, Del., recently announced plans for an approximate 30,000,000 gallon per year increase in its production of methanol, a synthetic alcohol used as an industrial solvent and as an intermediate for pharmaceuticals and related chemical products. In announcing the increase, John H. Daughtridge, director of the chemical sales division of the du Pont's polychemicals department, said that the company has already prepared

plans for an expansion of its methanol manufacturing units at Orange, Tex., and Belle, W. Va.

### Gawinski Joins Pennsalt

Joseph A. Gawinski has joined Pennsylvania Salt Manufacturing Co., Philadelphia, as staff assistant for the household products department, it was announced recently by Harold A. Fletcher, sales manager. In his new assignment Mr. Gawinski will assist in the marketing of the firm's "Knox-Out" line of insecticides.

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David G. Everitt



Edward Ray

### Name Coast Reps.

Everitt & Ray Co., Los Angeles, has been named sales representative for UBS Chemical Corp., Cambridge, Mass., on the west coast, it was announced recently. Everitt & Ray will handle UBS's line of industrial floor wax products which includes "Ubatol," a basic polymer used in the manufacture of floor waxes. Prior to the formation of Everitt & Ray in 1951,

David G. Everitt and Edward Ray were associated with E. S. Brown-ing Co., Los Angeles, a division of Innis-Speiden Co., New York.

### Johnson Elects Allen

James L. Allen has been elected to the board of directors of S. C. Johnson & Son, Inc., Racine, Wisc., it was announced last month. He replaces Otto L. Kowalke who has been named di-

rector emeritus. Mr. Allen is chairman of the executive committee and senior partner in Booz, Allen and Hamilton, Chicago.



### Synthetic Paraffin Wax

A new synthetic paraffin wax, designed for use in polishes of emulsion, solvent and paste types, has been introduced by Moore & Munger, New York, it was announced recently. Tradenamed "Parafint," the wax is imported from South Africa and is said to be water resistant and have a melting point of 215 degrees fahrenheit.

The product is manufactured at the Johannesburg plant of the South African Coal, Oil and Gas Co. by the Fischer-Tropsch process of synthesization and is said to be potentially available in large quantities at low cost. It is distributed exclusively in the United States by Moore & Munger. The company expects its first large-scale shipment to arrive in New York in early December.

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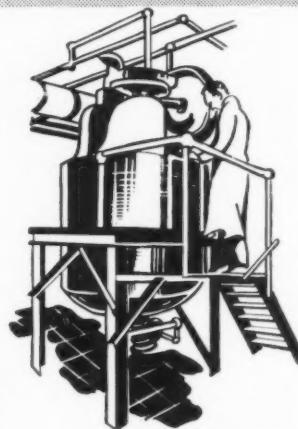
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## Production Clinic

(From Page 103)

shallow baskets with handles on either side like a roasting pan and carried to a bin which fed an attrition mill. The powdered product then was again carried by these baskets and dumped into a storage bin for further processing. An American production man would get gray hair in a day watching such a slow operation. It is quite typical, however, of Spanish production methods.

Another observation I made in a plant handling salad and soap oils was the lack of order and filth that were tolerated. The plant was one of the larger ones in Spain, and we were told that it was one of the best. We would not stand for such conditions in America.

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O., recommends the use of their "Jennite-16." This is a surface seal that imparts to asphalt an attractive, easy to clean surface. Bulletin 352-55 gives full details.

## Boron Products

**B**ORON chemicals find extensive use particularly in the detergent field. U. S. Borax & Chemical Corp., New York 17, offer a complete line of special Boron chemicals. Many of these are of interest to research chemists. More

## New Dispensing Pump

A new dispensing pump, designed to fit the standard three-quarter inch opening on drums from 15 to 65 gallons, has been developed by Multi-Meter Corp., Toledo, it was announced recently by L. C. Van Nest, president. The pump, which dispenses a fixed amount of four-ounces of material per stroke, is steel and chrome-plated to prevent corrosion and other harmful reactions from soaps, detergents, disinfectants and waxes. A specially designed handle enables the pump to be locked when not in use.



information will be gladly given by the company.

## Porcelain Filters

**C**HEMICAL porcelain filters in sizes and styles from one gallon up to 150 gallons are available from U. S. Stoneware Co., Akron 9, O. This type filter, which withstands high vacuum, is valuable in many ways. It is versatile, may be changed over rapidly, is corrosion resistant, impervious to action of most chemicals, will not contaminate, is non-absorbent.

## New Trade Marks

(From Page 135)

Dougherty, Inc., Chicago. Claims use since on or about Feb. 28, 1956.

**Eulava**—This for mothproofing agents. Filed Aug. 11, 1955 by General Aniline & Film Corp., New York. Claims use since Jan. 17, 1945.

**Dylox**—This for insecticides. Filed Nov. 21, 1955 by Chemagro Corp., New York. Claims use since Nov. 10, 1955.

**Kelthane**—This for insecticides, fungicides, and disinfectants. Filed Nov. 29, 1955 by Rohm & Haas Co., Philadelphia. Claims use since Nov. 16, 1955.

**Pyro**—This for antifreeze, cooling system cleanser, etc. Filed Jan. 6, 1956 by Olin Mathieson Chemical Corp., New York. Claim use since Apr. 20, 1955.

**Pyraid**—This for insecticide. Filed Feb. 7, 1956 by Feller-Jones Corp., New York. Claims use since June 8, 1953.

**Filmerine**—This for anti-rust solution for use in heat sterilization. Filed March 9, 1956 by Novocol Chemical Manufacturing Co., Brooklyn, N. Y. Claims use since Feb. 27, 1956.

**Lion**—This for antifreeze. Filed March 15, 1956 by Monsanto Chemical Co., St. Louis, Mo. Claims use since Oct. 1, 1945.

**Examide**—This for textile detergents and scouring agents. Filed Dec. 27, 1955 by Soluol Chemical Co., Natick, R. I. Claims use since on or about July 1, 1945.

**Neo-Creme**—This for concentrated car washing detergent. Filed Apr. 10, 1956 by Charles Fein, doing business as Neo Hi-Gloss Products, Chicago. Claims use since Jan. 20, 1956.

**Handyman's Cleaner**—This for solvents used in cleaning floors, furniture, paint brushes and rollers, linoleum, metal surfaces etc. of wax, grease and paint stains. Filed Apr. 10, 1956 by Loweeco, Inc., Chicago. Claims use since March 20, 1956.

**Purex Premier**—This for heavy duty detergent. Filed Apr. 23, 1956 by Purex Corp., South Gate, Calif. Claims use since Jan. 31, 1956.

**Auto-Kleem**—This for sponges with detergent to clean automobiles, etc. Filed May 18, 1956 by U. S. Sponge Corp., New York. Claims use since Apr. 18, 1956.

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### Coming Meetings

American Society for Test-  
ing Materials, Committee D-21 on  
Wax Polishes and Related Mater-  
ials, Washington, D. C., Dec. 10.

Association of American Soap  
& Glycerine Producers, 30th annual  
meeting, Waldorf-Astoria Hotel, New  
York, Jan. 23-25.

Chemical Market Research As-  
sociation, Sheraton Hotel, Philadel-  
phia, Feb. 19-20.

Chemical Specialties Man-  
ufacturers Association, 43rd annual  
meeting, Mayflower Hotel, Washing-  
ton, D. C., Dec. 3-5; 43rd midyear  
meeting, Drake Hotel, Chicago, May  
21-22, 1957.

CIBS, annual Christmas Dance,  
Plaza Hotel, New York, Dec. 8.

Drug, Chemical and Allied  
Trades Section, New York Board of  
Trade, 67th annual meeting, Galen  
Hall, Wernersville, Pa., Sept. 19-21,  
1957.

Entomological Society of  
America, annual meeting, Dec.  
27-31, 1956, Hotel New Yorker, New  
York City.

Folding Paper Box Associa-  
tion of America, annual meeting,  
Chicago, March 31 to April 4, 1957.

Grocery Manufacturers of  
America, 49th annual meeting, Wal-  
dorf Astoria Hotel, New York, Nov.  
11-13, 1957.

National Association of Re-  
tail Grocers, Los Angeles, June 10-14,  
1957.

National Packaging Exposi-  
tion and Conference, International  
Amphitheatre, Chicago, April 8-11,  
1957.

National Pest Control Associ-  
ation, 24th annual convention, Louis-  
ville, Ky., Oct. 21-24, 1957.

National Sanitary Supply  
Association, national trade show and  
convention, Conrad Hilton Hotel, Chi-  
cago, March 31, Apr. 1-3 1957.

Eighth Plant Maintenance  
Show & Conference, Public Auditor-  
ium, Cleveland, Jan. 28-31, 1957.

Society of Cosmetic Chemists,  
11th annual meeting, Commodore  
Hotel, New York, Dec. 13.

Toilet Goods Association, 24th  
meeting of Scientific Section, Wal-  
dorf-Astoria Hotel, New York, Dec.  
12; 22nd annual convention, Wal-  
dorf-Astoria Hotel, New York, May  
7-9, 1957.

# Index to ADVERTISERS

Aerosol Process Co.....	249	Givaudan-Delawanna, Inc. ....	Between 98 & 99, 198	Pennsylvania Industrial Chemical Co. 167	
Aerosol Research Co.....	130	Glidden Co., The.....	Facing 98	Pennsylvania Refining Co.....	238
Aerosol Techniques, Inc.....	136	Goodrich Chemical Co., The B. F. 204		Pennsylvania Salt Mfg. Co.....	174, 175
African Pyrethrum Development, Inc. 164		Gross & Co., A.....	24	Perry Bros., Inc.....	134
Alpha Eng. & Machine Works, Inc.....	250			Peterson Filling & Packaging Corp....	171
American Can Co.....	122			Philadelphia Quartz Co.....	72
Anchor-Hocking Glass Co.....	114, 115			Pilot Chemical Co.....	28
Andersen, Dr. Carl N.....	249	Harchem Div., Wallace & Tiernan, Inc. ....	Facing 99	Polak's Frutal Works, Inc.....	87
Antara Chemicals Div., General		Hercules Powder Co.....	36, 60, 61, 169	Powell & Co., John.....	153
Aniline & Film Corp.....	84, 85	Hill Top Research Institute, Inc.....	249	Precision Valve Corp.....	112, 113
Argueso & Co., M.....	236	Hooker Electrochemical Co.....	67, 230	Prentiss Drug & Chemical Co.....	232
Armour & Co.....	21	Houchin Machinery Co.....	88	Price, Dr. Donald.....	247
Aromatic Products, Inc.....	165	Hudson Laboratories, Inc.....	249	Procter & Gamble Co.....	16
Atlantic Refining Co.....	80	Hydrawlik Co. ....	Facing 134		
Atlas Powder Co.....	38			Rapids Machinery Co.....	252
				Raymond Laboratories, Inc.....	70
Bareco Wax Co., Division of		Inland Steel Container Co.....	116	Reilly Tar & Chemical Corp.....	17
Petrolite Corp. ....	Facing 224	International Minerals & Chemical Corp. ....	8, 9	Rhodia, Inc.....	104
Barr & Co., G.....	162	Island Equipment Corp.....	100	Rison Mfg. Co.....	108
Blockson Chemical Co.....	26			River Plate Corp., The.....	242
Bradshaw-Praeger & Co.....	246	Johns-Manville .....	151	Rohm & Haas Co.....	194
Builders Sheet Metal Works, Inc. ....	Facing 134	Jones & Laughlin Steel Corp.....	23	Roubechez, Inc.....	83
Bush & Co., W. J.....	246			Roure-Dupont, Inc.....	10, 11
Candy & Co.....	4	Koppers Co. ....	240	Scientific Associates .....	247
Carbide & Carbon Chemicals Co., Union Carbide & Carbon Corp... 57, 188		Kurly Kate Corp.....	252	Seil, Putt & Rusby, Inc.....	247
Central Can Co.....	228			Semet-Solvay Petrochemical Div.....	161
Chase Products Co.....	210	Lancaster, Allwine & Rommel....	247, 254	Shanco Plastics & Chemicals, Inc.....	253
Chemical Specialties Mfrs. Assn.....	143	Leberco Laboratories .....	247	Shea Chemical Corp.....	82
Clayton Corp.....	118, 119	Leeben Color & Chemical Co.....	256	Sindar Corp. ....	40
Colgate-Palmolive Co. ....	166	Lehmann Co., J. M.....	94	Foster D. Snell, Inc.....	239
Columbia-Southern Chemical Corp... 252		Lewers, Dr. W. W.....	247	Solvay Process Div., Allied Chem... 155, 173	
Commercial Solvents Corp.....	163	Lueders & Co., George.....	62	Solvents & Chemicals Group, The... 152	
Consolidated Packg. Machy. Corp....	107			Spraying Systems Co.....	250
Continental Can Co.....	Facing 134	Mac-Lac Co., The.....	250	Stallfort & Sons, Inc., John C.....	206
Continental Filling Corp.....	131	Magnus, Mabey & Reynard, Inc.....	218	Steadman & Co., F. W.....	256
Continental Oil Co.....	15	Mantrose Corp., The.....	154	Stepan Chemical Co.....	66, Facing 66
Cowles Chemical Co.....	14	Manufacturers Aid Co.....	247	Sterwin Chemicals Inc.....	196
Cox, Dr. Alvin J.....	249	Marchon Products, Ltd.....	12	Stillwell & Gladding, Inc.....	247
Crown Cork & Seal Co.....	128	Maryland Glass Co.....	139	Swift & Co.....	29
		Mazzoni, Sp.A., G.....	90	Synfleur Scientific Labs., Inc.....	176
		McCutcheon, J. W.....	247		
Dema Engineering Co.....	237	McLaughlin Gormley King Co.....	144	Tamms Industries, Inc.....	254
Diehl & Co., Wm.....	252	Meccaniche Mederne .....	96	Thomssen, Dr. E. G.....	247
Dodge & Olcott, Inc.....	2nd Cover, 156	Mercantile Wax Division.....	254	Tombarel Products Corp.....	238
Dow Chemical Co.....	30, 68, 106	Merchants Chemical Co.....	3	Tube Manifold Corp.....	138
du Pont de Nemours & Co., Inc. ....	35, 86, 186, 187, 202, 211	Miranol Chemical Co., The.....	31	Turner & Co., Joseph.....	Facing 98
Dura Commodities Corp.....	190	Mixing Equipment Co.....	92		
Durez Plastic Division.....	159	Mojonnier Assoc., Inc.....	Facing 134	UBS Chemical Corp.....	200
		Molnar Laboratories .....	247	Ungerer & Co.....	3rd Cover
		Monsanto Chemical Co.....	58, 59	Union Carbide & Carbon Corp., Carbide & Carbon Chemicals Co... 57, 188	
		Moore & Munger, Inc....	Betw'n 192 & 193	Union Standard Equipment Co.....	251
				United States Borax & Chemical Corp., Pacific Coast Borax Co. Div.....	27
Eastern Can Co.....	98			U. S. Bottlers Machinery Co.....	98
Eastman Chemical Products, Inc.....	168	National Aniline Division.....	34		
El Dorado Division.....	231	National Soap Dispenser Co.....	255	van Ameringen-Haebler, Inc... 76, 146, 147	
Emery Industries, Inc.....	19	Neumann, Buslee & Wolfe, Inc.....	254	Van Dyk & Co., Inc.....	245
Emulsol Chemical Corp.....	102	Newman-Green, Inc. ....	124	VCA, Inc.....	132
Enjay Co.....	42	Newman Tallow & Soap Mach'y Co... 248		Velsicol Chemical Corp.....	160
Ertel Engineering Corp.....	Facing 99	Ninol Laboratories, Inc.....	6, 7	Verley & Co., Albert.....	100
		Nitrogen Div., Allied Chem. & Dye... 189		Verona Chemical Co.....	64
		Nopco Chemical Co.....	25	Vulcan Containers Inc.....	95
		Norda Essential Oil & Chemical Co... 22		Vulcan Steel Container Co.....	120
Fairfield Chemical Division.....	4th Cover				
Federal Varnish Division.....	172	O'Donnell, James P.....	247	Warwick Wax Co.....	220, 221
Felton Chemical Co.....	208	Oil Equipment Laboratories, Inc.....	134	Wax & Rosin Products.....	212
Fine Organics, Inc.....	226	Old Empire, Inc.....	256	Welch, Holme & Clark Co.....	253
Florasynth Laboratories, Inc.....	192	Olin Mathieson Chemical Corp., Industrial Chemical Div.....	78	West Penn. Mfg. & Supply Corp....	140
Fluid Chemical Co.....	117	Onyx Oil & Chemical Co.....	216	Westvaco Chlor-Alkali Div.....	13
Fries & Fries, Inc.....	240	Oronite Chemical Co.....	18	Westvaco Mineral Products Div.....	33
Fritzsche Brothers, Inc.....	222	Ottawa Chemical Co.....	243	Wisc. Alumni Research Found.....	256
Fuld Brothers, Inc.....	145	Owens-Illinois Glass Co.....	110, 111	Wurster & Sanger, Inc.....	100
				Wyandotte Chemicals Corp.....	74
Geigy Agricultural Chemicals.....	157			Wymat Chemical Corp.....	Facing 225
General Chemical Div., Allied Chemical & Dye Corp.....	20, 148, 149				
Gesell, Inc., R.....	255	Paul & Stein Bros., F. H.....	244	Zinsser & Co., William.....	234
Gillespie-Rogers-Pyatt Co. ....	150	Penick & Co., S. B.....	185		

# Tale Ends

**A**PPARENTLY the 44th annual meeting of the Chemical Specialties Manufacturers Association, scheduled for Hollywood, Florida, in December, 1957, is going to be a real wingding! Already the General Entertainment Committee under the chairmanship of Bob Horsey of Givaudan-Delawanna, held a meeting December 3 at the Mayflower Hotel—a full year ahead of time! Looks like Senor Horsey and his committee are off to a running start and intend to let no grass grow underfoot.

Sports, including dancing, can be dangerous! Dupont recently issued a release saying that as many people are injured in off-time sports as those on the job. Baseball won the top spot for injuries with basketball, swimming, football, skating, hunting and bowling following in that order. Three Dupont employees were injured while dancing in the past three years. Nobody was hurt wrestling. We wonder what kind of dancing these Dupont folks go in for, buck and wing, rock 'n roll or what?

Because the designation, "rat catcher," was at times embarrassing, the City Council of Sydney, Australia, has issued an edict reclassifying their employees engaged in rodent control. Hereafter, they shall be known as "pest controllers." And in order to remove the "rat" stigma, their duties are being extended to cover the extermination of mice, flies and other pests. We trust that this new designation and the work are now more in keeping with the dignity of the position.

Art Schubert, executive vice-prez of Emery Industries, Cincinnati and other places, recently returned from a trip through Europe including Russia. The purpose of his foreign trek was to find out if the blokes on the other side knew anything more about fat chemistry and fatty derivatives than we do in the U. S. As soon as we can get to him, we hope to learn what he found out, if anything. And how he liked the vodka in Russia and if the vodka martini craze has hit Moscow yet.

Who's got any fly pupae for sale or to give away? And not for insecticide testing, but for bird feeding. It seems that Mrs. George R. Rinke, wife of "Bill" Rinke who used to be board chairman of John Powell & Co. in its pre-Mathieson days and now retired in Florida, has a large aviary peopled by hungry birds, mostly finches. "Bill" is going broke buying meal worms for said birds which he has shipped in from Ohio. Now he's got the idea that fly larvae would do the trick and cut costs. If you got any pupae surplus, send word to "Bill" at 545 McKinley Drive, Sarasota, Florida.

Jim Varley, head of James Varley & Sons, St. Louis, and dean of American dis-

infectant manufacturers, accompanied by Mrs. Varley, recently returned from a three-months stay in Europe including Switzerland, France and England. While in England, he visited his old home town of Cleckheaton, Yorkshire and had some nasty things to say about the rain, fog and dreary weather. Ever hear a Yorkshireman pronounce "Cleckheaton?" It sounds something like the playing of castanets.

One of New York's most eligible bachelors recently dropped by the wayside and joined the bonds of matrimony. For on November 10 last, Bob Abplanalp of Precision Valve Corp. up Yonkers way was married to Josephine Anne Sloboda, daughter of Mr. and Mrs. Paul S. Sloboda at St. Joseph's Church in Bronxville, N. Y. A reception followed at the Waldorf in N. Y. So we are instructing the keeper of the Bachelor Roll Book to cross off the name of Robert Henry Abplanalp!

George Simmonds, former prez (now retired) of U. S. Sanitary Specialties in Chicago was recently introduced to one of the newest and most novel uses for liquid soap. He was "accidentally" sprayed with liquid soap while walking along

Seneca St., Chicago. A nattily dressed young man ran up to him, apologized profusely and wiped the soap off his coat. When the man had gone, so was George's wallet containing \$215. And all he could think of was the tons of liquid soap he had sold in his active days.

Harold Schaefer, prez. of Gold Seal Co., Bismarck, N. D., and a merchandiser extraordinary if we ever saw one, has come up with a new promotion gimmick for "Gold Seal Glass Wax." For decorating windows with suitable designs during the Christmas season, Gold Seal is distributing stencils of snowflakes, Santa Claus, etc. Designed for use by children, as well as grown-ups, "Glass Wax" is then applied to the window and presto! you have a very artistic picture. The design may be removed by merely wiping the window with a dry cloth, which also cleans the window. Just as simple as that!

A new product which our mythical Spurious Products Co. might be interested in developing came out of the big CCDA (Commercial Chemical Development Association) meeting on soaps and synthetic detergents in Cincinnati last month. The product is an "anti-detergent" called "Scum". Its a brain child of the Antara Chemical boys. Page Bayard Johnson and Mel Fuld!

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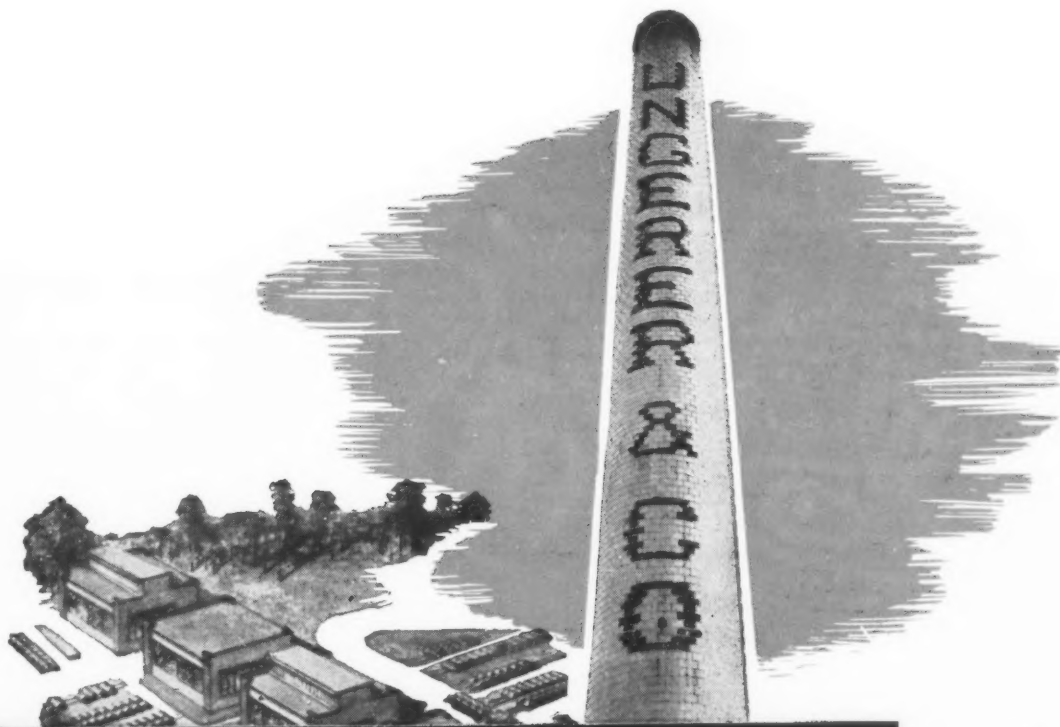
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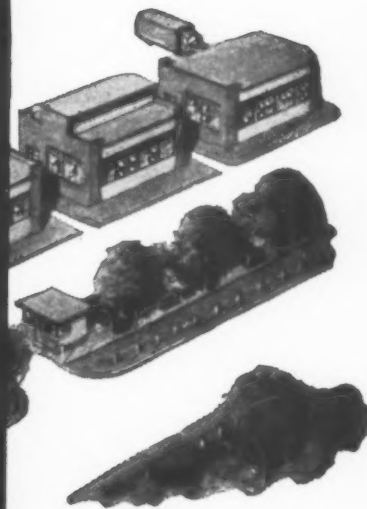
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